

The
William Edward Reis
Library



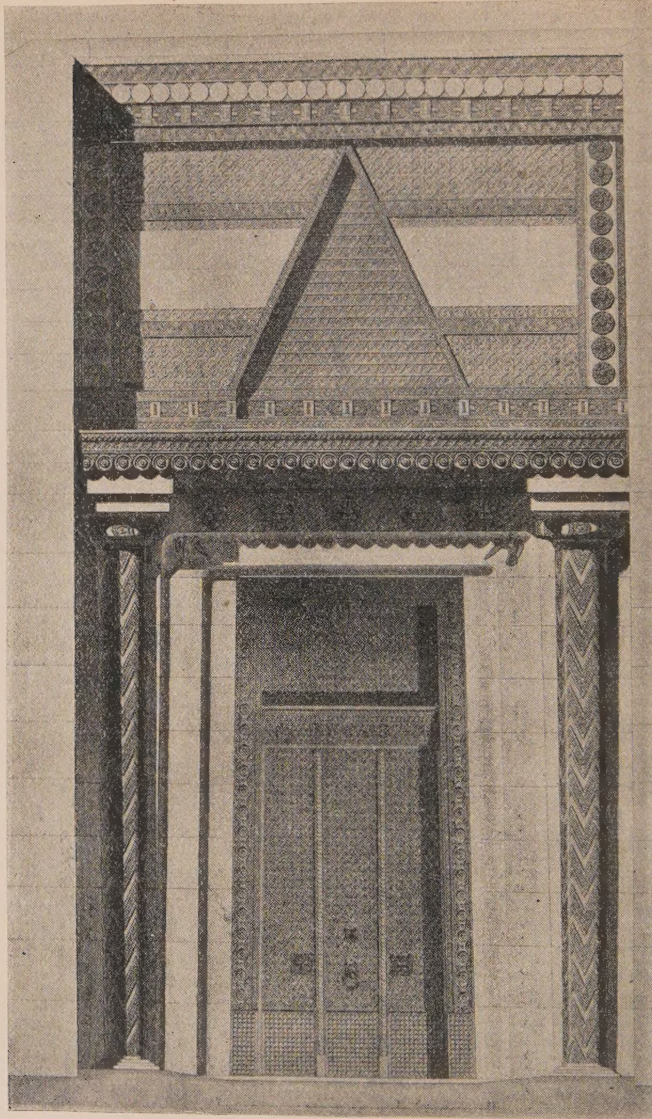
Allegheny College

bc

WITHDRAWN

THE ORIGINS OF ARCHITECTURE

PREHELLENIC
ARCHITECTURE
IN THE AEGEAN



MYCENAE: FRONT OF THE TREASURY OF ATREUS
As reconstituted by Charles Chipiez
(By permission of Messrs. Chapman and Hall.) See p. 185.

722.8
B413p

PREHELLENIC ARCHITECTURE IN THE AEGEAN

BY
EDWARD BELL
M.A., F.S.A.

AUTHOR OF "THE ARCHITECTURE OF ANCIENT EGYPT,"
"HELLENIC ARCHITECTURE: ITS GENESIS AND
GROWTH," "EARLY ARCHITECTURE IN
WESTERN ASIA," ETC.



WITH LXXX ILLUSTRATIONS
MAPS AND PLANS

LONDON
G. BELL AND SONS, LTD.
MDCCCXXVI

Augescunt aliae gentes, aliae minuuntur,
inque brevi spatio mutantur saecula animantum
et quasi cursores vitae lampada tradunt.

PRINTED IN GREAT BRITAIN.

CHISWICK PRESS: CHARLES WHITTINGHAM AND GRIGGS (PRINTERS), LTD.
TOOKS COURT, CHANCERY LANE, LONDON.

PREFACE

IN the four volumes called collectively "The Origins of Architecture" my object has been to supply an introduction to the early phases of the art which has been handed down to us through Greece and Rome, and to indicate the sources of a continuous tradition which runs throughout its history, and which, though continually affected by special circumstances of place and time, links the great works of medieval and modern days with the simpler art of prehistoric ages.

The history of any branch of culture is no less a process of evolution modified by environment than the development of species in the organic world, and in any such process the actual origin is as remote and indefinite as the origin of the human race. On such an enquiry I do not pretend to enter. For practical purposes it is generally assumed that the earliest evidences of order and method, otherwise of style, in any of the arts, especially in that of building, are to be found in Egypt; though it has become increasingly evident that the Sumerian civilization of Mesopotamia was not far behind and must have had its origin in other regions at a date not less remote.

However this may be, the connexion of either with European culture is less direct than the influence which can be attributed to the Aegean civilization of which Crete by its maritime domination seems to have been

the most active promoter. It is of this culture, so far as it is illustrated in architectural remains, that the present volume attempts to give some general account by bringing together from various published sources the results of the more important explorations which have been carried on in the Aegean area during the past half-century.

How this phase of art spread to the mainland on either side, and became an important constituent in the architectural achievement of Greece and its colonies I have tried to indicate in a small volume on "The Genesis and Growth of Hellenic Architecture"; whilst in another similar volume on Western Asia I have brought together evidence which tends to show that the Hittite culture of Asia Minor contributed to the formation of the Ionic and Hellenistic art by which that of imperial Rome was so deeply influenced. In logical sequence the present volume should come second in the series, but it was necessarily delayed pending the revision of Sir A. Evans's earlier excavations at Knossos which have now, to a certain stage, been co-ordinated in the first volume of his monumental work, "The Palace of Minos." That much still remains to be elucidated lies in the nature of his work, but I have some hope that this general review of the whole subject is not altogether premature and may serve some purpose for students or readers who feel any interest in the early history of architecture.

After the general diffusion in Europe of Roman civilization the architectural tradition pursued a clearer

course and has been dealt with by many better qualified writers, in whose well known works may be traced the sources of medieval art in the decay of that of Rome; and when Romanesque and Gothic had run their course, the reversion to Classical ideas through the renaissance art of Italy has been abundantly illustrated.

I cannot pretend to any originality in this volume, my object having been to arrange in some sort of order material which has not yet been incorporated in general histories of architecture. It is true that the same period has been covered in two well known and very interesting volumes, "Aegean Archaeology" by Mr. H. R. Hall, and "The Mycenaean Age" by Dr. Tsountas and Professor Manatt; but as the latter, which deals more distinctly with architecture, was published twenty-five years ago, when the relations between Mycenae and Crete were scarcely apparent, I hope that I am not presumptuous in rearranging some of the material which they brought together in the light of later discoveries; and that in regard to other writers on whom I have relied, I shall not be thought to trespass unduly upon ground already well occupied.

Amongst these various sources I must mention in particular the great work, "Troja und Ilion," by Dr. W. Dörpfeld, who supplemented with such important archaeological results Schliemann's first identification and excavation of the site of Troy. I have to thank him for his willing consent to my use of some of his interesting plans, drawings, and photographic illustrations. No less am I indebted to Sir Arthur Evans, whose name,

known to students in every branch of antiquarian learning, will more especially be associated with the history and, it may be said, with the rediscovery of the ancient culture of Crete. I have to thank him and his publishers, Messrs. Macmillan, for kindly allowing me to make use of his published material relating to Knossos. It will also be evident that I owe a great deal to the reports of the Italian archaeologists, Professor Halbherr and Dr. Pernier, the excavators of Phaestos, many of whose illustrations appeared in "The Palaces of Crete," by Dr. A. Mosso, kindly placed at my disposal by his publisher, Mr. Fisher Unwin. I am greatly indebted to the Council of the Society of Antiquaries for permission to use various illustrations which have appeared in "Archaeologia"; to the Managing Committee of The British School at Athens for many which were first published in volumes of their Annual, and to the Council of the Society for the Promotion of Hellenic Studies for the use of several from their journal. I must also thank Mr. Theodore Fyfe and Sir A. Evans for permission to use, and to take some few small liberties with the original measured plan of Knossos. My obligations to the Library of the Hellenic and Roman Societies and to Mr. Penoyre's excellent classified catalogue of the same it is impossible to overrate; and lastly I must thank Mr. John Williamson for drawings of sundry illustrations which were more conveniently reproduced in that form.

E B.

December 1925.

CONTENTS

CHAPTER	PAGE
PREFACE	v
LIST OF ILLUSTRATIONS	xi
ABBREVIATED REFERENCES	xv
I. INTRODUCTORY	I
II. MINOAN CHRONOLOGY: THE EARLY PERIOD	6
III. PREHISTORIC TROY	13
IV. THE ADVANCE OF CRETE	24
V. THE MIDDLE MINOAN PERIOD	29
VI. CHAMBER TOMBS	38
VII. THE LATE MINOAN PERIOD	45
VIII. THE PALACE OF KNOSSOS: THE WESTERN WING	53
IX. THE PALACE OF KNOSSOS: THE EASTERN WING	63
X. KNOSSOS: THE THEATRICAL AREA	79
XI. KNOSSOS: THE LITTLE PALACE AND ROYAL VILLA	82
XII. PHAESTOS	91
XIII. HAGIA TRIADA	105
XIV. CRETAN TOWNS	114
XV. TECHNICAL DETAIL	121
XVI. FORTIFIED TOWNS: PHYLAKOPI AND TROY VI	131

CHAPTER	PAGE
XVII. THE GREEK MAINLAND: TIRYNS . . .	147
XVIII. MYCENAE: THE WALLS AND THE PALACE	156
XIX. MYCENAE: THE SHAFT-GRAVES . . .	172
XX. MYCENAE: THE CHAMBER TOMBS AND THOLOI	181
XXI. GOULAS OR GLA	189
XXII. SUMMARY	199
CHRONOLOGICAL DATA	208
INDEX	211

LIST OF ILLUSTRATIONS

	PAGE
MYCENAE: FRONT OF THE TREASURY OF ATREUS, AS RE- CONSTITUTED BY CHARLES CHIPIEZ <i>Frontispiece</i>	
MODEL OF A HUT FROM PHAESTOS	8
THE SITE OF TROY: HISSARLIK FROM THE AIR IN 1923	12
PLAN OF TROY II	15
TROY II: TOWN WALL ON THE EAST	17
„ PAVED RAMP	19
„ CONSTRUCTION OF THE MEGARON WALLS	21
PLAN OF THE OVAL HOUSE AT CHAMAIZI IN CRETE	25
KNOSSOS: THE HYPOGAEUM (HORIZONTAL AND VERTICAL SECTIONS)	31
KNOSSOS: ROUNDED ANGLE OF PART OF THE EARLY PALACE	32
DIAGRAM OF EXCAVATION	34
RECENT DISCOVERIES AT KNOSSOS: PIERS OF VIADUCT	35
„ „ „ RECONSTRUCTION OF THE LOGGIA	35
PLAN OF THE TOMB AT ISOPATA	39
SECTION OF THE VAULT	41
TOMB OF THE DOUBLE AXES: INTERIOR AND PLAN	43
SANCTUARY IN THE PALACE OF PHAESTOS	48
KNOSSOS: PILLAR INCISED WITH DOUBLE AXES	49
„ SKETCH PLAN OF THE PALACE	52
„ PILLARS AT NORTH ENTRANCE	53
„ PORTICO AND STAIRCASE ON THE WEST SIDE OF THE CENTRAL COURT	56

	PAGE
KNOSSOS : THE THRONE OF MINOS	57
" FLOOR OF THE SOUTH-WEST PORCH	60
" FOUNDATIONS OF THE SOUTH PROPYLAEUM	60
" RECONSTRUCTED ELEVATION OF GRAND STAIRCASE	62
KNOSSOS : THE COLUMNED HALL AND STAIRCASE	63
" THE LOWER EAST-WEST CORRIDOR	65
" THE COURT OF THE STONE SPOUT	66
" PLAN OF THE DOMESTIC QUARTER	68
" LIGHT-WELL, HALL OF THE DOUBLE AXES	69
" THE THEATRAL AREA	79
" PLAN OF THE LITTLE PALACE	83
" SHRINE IN THE LITTLE PALACE : SECTION	84
" SECTION OF THE COLUMN, LITTLE PALACE	85
" ROYAL VILLA : WEST END OF THE HALL	87
" " PLAN	89
PHAESTOS : GROUND PLAN OF PALACE	90
" STEPPED APPROACH TO STATE ENTRANCE	91
" THEATRAL AREA	93
" STOPPED STAIRCASE AND QUEEN'S MEGARON	99
" PERISTYLE COURT	102
HAGIA TRIADA : PLAN	104
" MEGARON AND BELVEDERE	105
" STEPS AT NORTH ENTRANCE	107
" WEST END OF MEGARON	107
" ROOM WITH WINDOW AND SEAT	109
TILES REPRESENTING HOUSE FRONTS	115
PLAN OF GOURNIA	117
GOURNIA : PLAN OF CHIEF RESIDENCE	119
INTERIOR OF WEST WALL, KNOSSOS	122

LIST OF ILLUSTRATIONS

xiii

	PAGE
LAMP	126
COLUMN FORM FROM VASE	126
MURAL FRESCO : OPEN GALLERY	127
" ARCHITECTURAL FRONT	127
SCULPTURED FRIEZE	128
MODILLION-LIKE ORNAMENT	129
PHYLAKOPI, MELOS : TOWN WALL	131
" " PLAN OF THE TOWN WALL	132
" " PLAN OF THE PALACE	133
TROY VI : GROUND PLAN OF REMAINS	134
" SECTION OF THE WALLS	135
" TOWN WALL ON THE EAST	137
" NORTH-EAST BASTION AND LATER STAIRS	139
" BACK WALL OF A HOUSE	142
TIRYNS : PLAN OF CITADEL AND PALACE	146
MYCENAE : THE LION GATE	156
" THE ACROPOLIS	159
" THE LION PEDIMENT	161
" PLAN OF REMAINS OF PALACE	164
" SECTION AND GROUND-PLAN OF STAIRCASE	166
" THE GRAVE CIRCLE FROM THE NORTH	172
" PLAN OF THE GRAVE CIRCLE	174
" STELE FROM GRAVE CIRCLE	177
" THE TREASURY OF ATREUS	184
" RESTORED CAPITAL	185
GOULAS : EXTERIOR OF WALL	189
" PLAN OF THE ROCK	190
" PLANS OF THE GATES	191
" " " "	192
" PLAN OF THE RESIDENCE	194
MAPS OF THE AEGEAN AND CRETE	End

ABBREVIATED REFERENCES IN THE NOTES

(Titles sufficiently indicated are not included here.)

- AEG. ARCH. Aegean Archaeology. By H. R. Hall. 1915.
ANTIQUARIES JOURNAL. } Society of Antiquaries, London.
ARCHAEOLOGIA. }
ARC. OF A. EGYPT. The Architecture of Ancient Egypt. By
E. Bell. 1915.
ARC. OF W. ASIA. Early Architecture in Western Asia. By
E. Bell. 1924.
ATH. MITT. Mitteilungen des K. Deutschen Archaeologischen
Instituts.
B.C.H. Bulletin de Correspondance Hellénique.
B.S.A. Annual of the British School at Athens.
BURROWS. The Discoveries in Crete. By Ronald M. Burrows.
1905.
CHOISY. Histoire de l'Architecture.
DÖRPFELD. Troja und Ilion. Von W. Dörpfeld, etc. Athens,
1902.
DUSSAUD. Les Civilizations Préhelléniques. Par R. Dussaud.
2nd edition. 1914.
EVANS. The Palace of Minos. By Sir Arthur Evans. Vol. i.
1921.
GOURNIA. Gournia, Vasiliki, etc. By H. Boyd Hawes (Phila-
delphia). 1908.
HALL'S N. E. The Near East, by H. R. Hall. 1913.
HELLENIC ARC. Hellenic Architecture. By E. Bell. 1920.
J.H.S. Journal of the Society for the Promotion of Hellenic
Studies.
MEM. R. I. LOMBARD. R. Instituto Lombardo : Memorie. Milan.
MEYER. Geschichte des Alterthums. Von Ed. Meyer. Vol. i,
3rd edition. 1913.
MON. ANT. Accademia dei Lincei ; Monumenti Antichi. Milan.
MOSSO. The Palaces of Crete. By Angelo Mosso. (Trans.)
1907.

- NOACK O. & P. Ovalhaus und Palast in Kreta. Von Ferd. Noack. 1908.
- P. AND C. Histoire de l'Art dans l'Antiquité. Par G. Perrot et C. Chipiez. Vols. vi and vii.
- P. OF M. The Palace of Minos, by Sir A. Evans.
- PHYLAKOPI. Excavations at Phylakopi in Melos. By T. D. Atkinson and others. 1904.
- SCHLIEMANN. Mycenae. 1878
- SCHUCHHARDT. Schliemann's Excavations. By C. Schuchhardt. (Trans.) 1891.
- SEAGER. Explorations in the Island of Mochlos. By R. B. Seager. Boston, U.S.A. 1912.
- TIRYNS. The Prehistoric Palace. By H. Schliemann. 1886.
- T. und I. Troja und Ilion. By W. Dörpfeld.
- TS. AND M. The Mycenaean Age. By C. Tsountas and J. I. Manatt. 1897.

PREHELLENIC ARCHITECTURE IN THE AEGEAN

CHAPTER I

INTRODUCTORY

AT the beginning of the present century, when the results of recent archaeological explorations in Crete were made known to the public, the modern world became for the first time generally aware of the former existence of a widely spread Aegean civilization, which could be traced from its earliest phase to its sudden suspension by some hostile power. It also became evident that this civilization, though it was for a considerable period contemporaneous, and to some extent in contact with those of Egypt and of the mainland on the east and west, had nevertheless a character peculiar to itself and must in future take a leading position in the history of European culture. It is true that the work of Schliemann in the Troad and Argolis had already brought to light evidence of a pre-Hellenic culture which till then had only been recognized in legend, and regarded as poetical invention without historical basis; and these discoveries when correlated with other explorations in the Aegean islands—more particularly the Cyclades and Cyprus—furnished ocular evidence in the shape of jewellery, pottery, graves, and remains of buildings, of the prevalence throughout the eastern Mediter-

raean, during the Bronze Age, of a widely extended and more or less uniform phase of social life. Similarities between fortresses at Tiryns, Mycenae, and what since Schliemann's death has been recognized as the Homeric Troy, and the occurrence of similar objects on their sites proved the former existence of ruling potentates living simultaneously in considerable state and luxury, having in common general ideas as to art and architecture, and maintaining between themselves a more or less frequent commercial intercourse. The importance of the discoveries by Schliemann and other explorers at Mycenae and Tiryns had led to Argolis being regarded as the focus and chief source of this culture, which thus came to be designated as Mycenaean.

But the whole subject received an additional flood of light and was immensely extended in respect to both time and space by the more recent excavations in Crete, especially those of Sir Arthur Evans at Knossos. Though Crete had long been reputed in Greek legend and tradition as a land of ancient might and mystery, and though Minos and his Minotaur were names of dread import in the fabled history of the Athenians, there had hitherto been no solid evidence to account for such apparently unsubstantial tales. All that could be said by modern historians was that some traditions recorded by Herodotus, and some occasional allusions in the Homeric epics, pointed to Crete as a centre from which in prehistoric times civilization might have been diffused throughout the Aegean area. According to Herodotus the Carians of Asia Minor were said by the Cretans to have migrated from the islands where they had been "subject to Minos." Of the Lycians it is stated that they were expelled by him from Crete. But the people of Kaunos in Caria regarded themselves as Cretan in origin, whilst Herodotus supposed them to be autochthonous on the mainland; for though their

customs were peculiar their language was the same as elsewhere in Caria.¹

Whatever may be the value of these statements, and whether we regard Minos as an individual, or as a dynastic title, they are at least evidence of a pre-eminent position and wide influence attributed to Crete in an earlier age, and of relations between that island and neighbouring lands which recent exploration has amply corroborated. It is to be noted, moreover, that these traditions had in the time of Herodotus become ancient history, and probably refer to a period when Crete was already in a state of decadence: and in that case they are not inconsistent with the theory that Crete was originally colonized by people who came from the Anatolian mainland by way of Caria, Rhodes, and Karpathos.² A glance at the map will show how much more likely this seems than that they first came by the longer sea route from the African coast, as some authorities maintain.³

The difficulty of giving any comprehensive and

¹ Herod., i, 171-173. These somewhat inconsistent theories seem explicable by the supposition that the original colonizers of Crete came from Asia Minor, which E. Meyer (i, § 505) seems to regard as probable. It would explain some community in religious ideas, such as the symbolic use of the double axe, which occurs in various parts of Asia Minor. On this subject also Meyer summarizes a good deal of information (§ 481).

² Karpathos does not seem to have been explored for neolithic remains, though R. M. Dawkins's paper in "B.S.A.," vol. ix, suggests that there is a good deal still to be investigated there.

³ See D. Mackenzie on Cretan Palaces in "B.S.A.," vols. xi-xiv, The provenance of the Cretans, or the source of their culture, has been assigned by different authorities to all four quarters of the compass. See Burrows, p. 191, and a paper by Schuchhardt in the transactions of the R. Prussian Academy, 1913. Sir A. Evans inclines to an Anatolian origin combined with some infiltration from North Africa and modified by certain formative sympathies with mainland Greece. (See "Palace of Minos," p. 14, and his preface to the "Vaulted Tombs of Mesará," by Dr. Xanthoudides.)

connected account of this civilization is increased by the uncertainty which still obscures the ethnical relations of those early communities bordering on the Mediterranean, which have left in some cases such remarkable vestiges and monuments. It is the opinion of many ethnologists, that during the neolithic period a dark-skinned dolico-cephalic race of somewhat small stature was indigenous throughout the Mediterranean basin: and though they were disturbed and displaced by strife amongst themselves, and in some cases conquered by hardier races pressing upon them from the north, it is reasonably assumed that they preserved much of their individuality, and that to this day they form an important element in the populations of Spain, southern France, Italy, Greece, and the islands of the Mediterranean. To the prevalence of this racial element some writers attribute the artistic qualities of all these southern nations;¹ and it has now become an obvious fact that throughout the Bronze Age a remarkable degree of aesthetic culture, in which Crete was particularly conspicuous, prevailed in the whole of the Aegean area; and that, though occasionally suppressed with violence, it rose again with renewed vigour in times which are connected by unbroken records with our own.

The explorations at Knossos have shown that the neolithic age there was of exceptional length, which probably indicates that the site was occupied at an earlier date than others in the island. From the introduction of metal until the end of the Bronze Age there was a continuous development of culture which at last overspread the whole of the Aegean area. But in its earlier phases Crete had no special pre-eminence in this culture, and in some respects it seems that the civilization of the coasts and other islands of the eastern Medi-

¹ See Burrows, p. 146, and H. R. Hall, "Jl. of Egypt. Arch.," vol. i, p. 110.

terranean led the way. As this was certainly the case in the Nile delta, it is probable that regions which were especially subjected to the influence of Egypt had an earlier start. But when the knowledge of metal smelting and the use of bronze implements became general, Crete steadily advanced in wealth and power and seems eventually to have attained to a sea-empire more influential in the Aegean and on its western coasts than that of Egypt at its eastern extremity. The Mycenaean civilization of the Greek mainland, though it had independent features of its own, was undoubtedly based mainly on that of Crete, which may thus be regarded as—to use the words of Sir Arthur Evans—"at once the starting-point and the earliest stage in the highway of European civilization."¹

¹ "The Palace of Minos," p. 24. See also "Crete the Forerunner of Greece," by C. H. and H. B. Hawes, 1911.

CHAPTER II

MINOAN CHRONOLOGY: THE EARLY PERIOD

ONE of the first arts acquired by mankind was that of moulding clay into objects which when hardened by heat formed utensils for domestic use, or rude figures of primitive gods.

The degree of skill shown in the shaping and decoration of such earthenware has thus become an index of progress in culture. However fragile these objects may be, yet when sufficiently hardened by fire their remains are impervious to the destructive action of moisture or heat; and hence it is possible, and sometimes only in this way, to trace the gradual advance in the arts of life of any long-settled community. Chiefly by such means Sir Arthur Evans, during his extensive and carefully analyzed excavations on the site of Knossos in Crete, has been able not only to trace the growth of a single settlement, but also to work out a general scheme of successive archaeological periods to which results from other sites in the same area of civilization can be referred. In some cases the discovery of objects obviously imported from Egypt to the islands—or the converse—has made it possible to fix approximately the actual date of some stratum under investigation, and to construct within definable limits a trustworthy chronology.¹

By this method the prehistoric Aegean era which Sir A. Evans has designated as Minoan, and which

¹ See Hall's "Aeg. Arch.," p. 3, and "The Near East," p. 36.

coincides in duration with the Bronze Age, is divided into three principal periods, Early, Middle, and Late Minoan, each of which is subdivided into three, and can be conveniently indicated as E.M.i, M.M.iii, L.M.ii, etc., as the case may be.¹

It is generally supposed that until the third millenium B.C. the Aegean islands and coasts on the east and west were still in the late Stone Age when metal was unknown, and earthenware was of that primitive kind which is shaped by the hand alone, and hardened in an open fire. Explorations on several islands and on the mainland of Greece show that there was a general level of human development throughout the whole region. The graves are small rectangular pits of little more than a yard in length and half a yard in depth, showing that bodies were buried in a contracted or "crouched" position. They are generally lined with slabs of stone or marble, one on each surface, and covered with loose stones without any special indication. They contained rough pottery and also vases fashioned from stone, some apparently antedating the use of clay. Another type of grave, characteristic of the Bronze Age, was lined with smaller stones, the courses of which were corbelled or successively projected inwards so that the sides converged upwards.²

The oldest specimen of human habitation found in Crete is, perhaps, a cave dwelling at Miamu, a village in the Mesará district, some miles south of Gortyna, but as this is simply a natural grotto it has no bearing on the history of building. It contained in its lowest stratum neolithic pottery, and seems to have been used

¹ This nomenclature has been generally adopted. Dr. E. Meyer suggests a somewhat different division, but as it is based on the same facts the difference seems unimportant. See Meyer, i, §§ 504 and 518 *n*.

² Dussaud, pp. 82-86.

at a later date as a sepulchre.¹ A step forward is found at the village of Megasa, near Palaikastro, where Mr. R. M. Dawkins explored a neolithic settlement in which the oldest habitation was a shallow cave, the front of which was protected by a rough wall of unhewn stones.²

The earliest constructed dwellings may have been, in Crete as elsewhere, circular huts of wattle and daub or other perishable material of which no evidence remains apart from some clay models discovered by Dr. Pernier at Phaestos. That the first inhabitants did not use stone



MODEL OF HUT FROM PHAESTOS
(Mosso.)

for building is evident from the fact that in the neolithic stratum at Knossos, which is nearly 9 yards thick, the lower levels show no trace of stone walls.³ But in the neolithic settlement at Megasa, just mentioned, was found the plan, indicated by a single course of limestone blocks, of a dwelling the upper walls of which must have

been of light material. As one side is 36 feet in length, it is probable that it contained more than one room. It is rectilinear in plan, which shows that the circular form was soon disused.

The discovery and adaptability of copper and tin is generally supposed to have taken place about 3000 B.C. Thenceforward the use of brass and bronze spread

¹ It was discovered by Signor Taramelli and is described in "Mon. Ant.," ix, 303 *sq.*, and in the "Am. Jl. of Archaeol.," N.S. i, p. 287.

² "B.S.A.," vol. xi, p. 260.

³ See "Phylakopi," p. 241.

throughout the Aegean, and a steady progress in civilization, inaugurating what is known as the Early Minoan period, began. That the use of bronze came to Europe from Egypt, as some maintain, is not evident. It seems more probable that, as Mr. Hall suggests,¹ it originated in Cyprus, where the ore is found. But that there was very early intercourse between Egypt and the islands is indicated by the similarity between some of the Egyptian pre-dynastic pottery and that of Crete, as well as the discovery in Crete of Egyptian stone bowls, etc., of similar early date.²

One of the oldest of the island sites which have been carefully explored is that of Phylakopi, a town in the island of Melos, which probably owed its rise and importance to the export of obsidian, of which it had a monopoly in the Aegean.³ The first town of stone-built houses of which there are some remains probably rose on the site of an earlier village about 3000 B.C. This town was not originally fortified, but it was rebuilt at a later date with a strong rampart.⁴ Though the primitive period of occupation, indicated by the depth of the neolithic stratum, was much shorter than that at Knossos, the early pottery at Phylakopi shows a stage in design somewhat in advance of that in Crete.⁵ Roughly drawn figures of birds and fishes appear, as well as the so-called "boat" design; and concentric circles joined by tangents, afterwards developed into

¹ "Aeg. Arch.," p. 44.

² See Meyer, i, § 510; Hall, "Jl. of Egypt. Arch.," vol. ii, p. 111; Evans, "Palace of Minos," pp. 64, 65. Several such vessels were found in the remains of two neolithic houses below the central court at Knossos, indicating a commerce with Egypt not later than the fourth millenium B.C. ("Times," 16 Oct. 1924).

³ Obsidian is a hard volcanic glass much used before the discovery of iron for weapons, tools, and even razors.

⁴ See "Phylakopi," pp. 231, 248; also *post*, ch. xvi.

⁵ Meyer, i, § 511; Burrows, p. 50.

the widely used tangential spirals which are common in Egyptian work.¹

But apart from local variations and unevenness of progress there is evidence that a more or less uniform stage of culture prevailed over the whole of the Aegean from Cyprus to the Hellespont, and from Asia Minor to Greece and even to Italy, involving relations probably of a commercial kind with distant peoples as far as the Danube.

¹ It has been suggested that the spiral which became such an important element in decorative art was derived from wound cord or from basket work (Meyer, i, § 512 *u.*). Elsewhere (§ 495) M. mentions gold wire. That it was used decoratively before the Bronze Age is apparent from the fact that in a neolithic cemetery at Butmir in Bosnia vases are found with spiral decorations (see Hogarth's "Ionia," p. 113). It occurs also at Hal Tarxien in Malta, a site which was not inhabited after the neolithic period (see "Archaeologia," vol. lxvii, p. 134).



THE SITE OF TROY. The Hill of Hissarlik from above in 1923
(By permission of the Air Ministry)
The surrounding trenches are modern Turkish defences.

CHAPTER III

PREHISTORIC TROY

THE progress which was made in the five or six centuries which followed the introduction of metal, and which coincide with the Early Minoan period, is illustrated by the results of the exploration of the hill of Hissarlik on the north-west coast of Asia Minor, which was proved by Schliemann to be the site of Troy. Here, reckoning from the primitive settlement down to the Greek and Roman towns of Ilium, nine different stages of occupation were discovered. From the first the site seems to have been a fortified post, for the earliest neolithic settlement was surrounded by a wall, about 8 feet thick, of rough stones laid flat for the most part in regular courses, though in one case they are disposed in herring-bone fashion.¹ There is evidence of a later extension by a still thicker wall, and it is possible that it was continuously occupied even after the purely neolithic era—a question which cannot be solved without the destruction of later work of interest. It is to be noted that the house-plans were, as in Crete, rectangular.

The second settlement followed after a considerable interval, for there is an accumulation of soil between the two. It was a small fortified town or stronghold built mostly of brick, which Schliemann hastily assumed to be the legendary city; and the treasure of gold ornament which he found concealed in the wall seemed to justify its being synchronized with the civilization depicted in the *Iliad* and *Odyssey*. But further excavations which

¹ Dörpfeld, p. 47.

were carried out by Dr. Dörpfeld after Schliemann's death, beyond the circuit of the older walls, showed that the sixth settlement, more than 500 years later in date, must have been the Troy of Homer.¹

The date of the second, which from the signs of its destruction is known as "the burnt city," was corroborated by a discovery made in the small island of Mochlos on the north-east coast of Crete. Here an important cemetery was excavated, and a hoard of gold ornaments corresponding in style with Schliemann's so-called "Treasure of Priam" came to light. The tombs contained also a number of fine vases of stone, marble, and alabaster, showing a high degree of taste and skill, whilst the pottery which accompanied them was all of the kind which is associated with an early Minoan date, probably about 2400 B.C.²

This so-called Second City, nearly the whole of which has been uncovered, seems from its character and small size to have been a burg, or fortified residence for a chieftain and his immediate dependents, not unlike a mediaeval castle round which the subject population lived in farmhouses or cottages.³ The total area of the place was not more than 10,000 square yards, and the circumference of the walls in their latest extent was less than a quarter of a mile.⁴ The date of this occupation,

¹ The following approximate dates are given by Dr. Dörpfeld, p. 31 :

- I. Primitive settlements, before 2500 B.C.
- II. Prehistoric Troy (the Burnt City), 2500-2000.
- III-V. Three village communities, 2000-1500.
- VI. Homeric Troy, 1500-1180.

² See Hall, "N. E.," p. 39. The cemetery was excavated in 1908 by the late Mr. R. B. Seager of the American School at Athens. See "Explorations in Mochlos," Boston, 1912.

³ Meyer, i, § 493.

⁴ Dr. Dörpfeld estimates the earlier wall at 300 metres, but there was an extension on the south side on two occasions. See "T. u. I.," p. 56.

which is estimated to have lasted for about 500 years from 2500 B.C., has a special interest in affording material evidence of the early existence in the Aegean area of an organized community whose rulers lived in some degree



PLAN OF TROY II. (Dörpfeld.)

The earlier southern walls are shown by broken lines.

of luxury and practised architecture on an extensive scale. The plan and character of the buildings are also interesting in illustrating characteristic types and methods which reappear at a much later date on the mainland of Greece.

The hill on which this fortress was built has on the north side an abrupt declivity on the upper slope of which the wall was built; but it has now disappeared, having been destroyed, it is supposed, in ancient times.¹ But on the south and east, where the ground is less steep, there are imposing remains which, ruinous though they are, suffice to show their somewhat remarkable construction.

On a foundation of rough stones which varies in height from 3 to 28 feet according to the contour of the ground, and has in most places a batter sometimes amounting to 45° , the upper walls are built of large sun-dried bricks or tiles 18 inches long, the courses of which were alternated at intervals with horizontal ties of timber.²

The walls form, in plan, an irregular polygon, and some of the sides are strengthened by turret-like projections, which were not mere buttresses, but were evidently intended to assist in repelling besiegers. The original height of the walls is not determinable: in some places about 10 feet of the brickwork remains, with evidence of much fallen material below. Remains of charred beams seem to indicate that they were finished at the top with a covered timber gangway³ which would no doubt have added much fuel to the fire which destroyed the whole place. The outer, and probably the inner, face of the walls was originally rendered smooth

¹ Dörpfeld, p. 51.

² On the east side, where the terrain is level, the foundation is only 1 m. high and has a vertical face. The size of the bricks varies from 18×10 in. to $26 \times 12\frac{3}{4}$ in. In the interior buildings they are much larger in surface though the thickness is everywhere about the same, viz., $4\frac{3}{4}$ in. See Dörpfeld, pp. 37, 40, 75.

³ *Ibid.*, p. 76. The bricks in many cases are turned to terra-cotta by the fire. Schliemann at first had the idea that they were purposely fired after the completion of the structure in order to increase their durability. See his "Troja," pp. 52 and 78, but he revised this opinion later. See "Tiryns," p. 257.

by a surface of stucco which appears to have been washed from time to time by a thin coat of clay.¹

The original entrances, two of which (FL and FN on the plan) can still be traced, were walled passages, which after penetration of the circuit wall led up by a gradual slope to the middle of the fortress, their outer-



TROY II: TOWN WALL ON THE EAST

A mass of crude brick on stone footings. (Dörpfeld.)

most ends being protected by massive towers or gate-houses which projected from the exterior surface of the wall.² But there is evidence of two enlargements of the site which involved reconstructions of the southern half of the wall, and alterations of the gateways both in situation and form. In the latest phase the chief

¹ Dörpfeld, p. 77.

² *Ibid.*, p. 56.

entrance was by a large gateway on the south east (FO), whilst a similar one of smaller dimensions (FM) afforded an entrance on the south-west.¹ Owing to the lower level of the terrain outside, and the levelling up of the ground inside, this latter was approached by a ramp at right angles to the wall, the paving of which still remains in good condition though the broad parapet which protected each side has vanished.

The plan of these gates differs altogether from the simpler one of the earlier walls. They are nearly on a level with the interior court, and an exterior ramp is therefore necessary. The ground-plan of the gateway is in three portions, a central chamber with a deep porch at front and rear. There were thus two doorways which in the larger gate were about $14\frac{1}{2}$ feet wide, and were presumably closed by two-leaved doors. Of the external appearance of these gates it is difficult to form a definite idea, but it is obvious that there must have been some sort of tower-like structure at their intersection with the walls. The only indication of any ornamental feature are stone bases at the inner ends of the side walls, which presumably supported wooden pilasters. These gatehouses, by their triple division and double doorways, must have been strong defensive works, capable of keeping out besiegers more effectively than the earlier walled passages, which seem to have been designed to intercept the enemy after he had forced the first barrier. In conjunction with the advancement of the walls they evidently mark a change in methods of attack and defence corresponding with the improvement in weapons and military science which accompanied the general use of metal.

The larger gate led directly into an open court paved

¹ The miscalled "Treasure of Priam" was found in a cavity in the rebuilt western wall at the angle where it crossed the closed-up gateway FL. See Schliemann's "Ilios," p. 40.

with pebbles without any indication of a walled passage; but on the north side opposite are the remains of a buttressed wall in which was a gateway (c) leading into



TROY II: PAVED RAMP AT THE DOOR FM
And base of the Town wall. (Dörpfeld.)

an inner court. This smaller entrance differs also from the outer gates in having only one doorway, but it had similar deep porches in front and behind. A flat stone

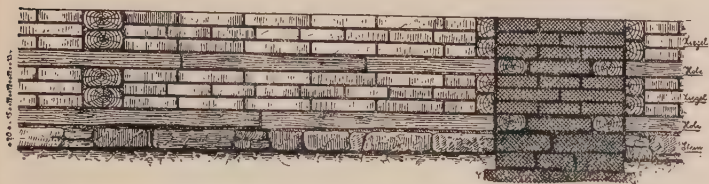
measuring about 9 by 6 feet forms the threshold, and there are stone slabs at both ends of the side walls on which were worked rectangular raised bases for rows of upright timber posts which probably had some carved or incised decoration. The side walls, which rested on stone footings, were built up in the usual crude brick-work interspersed with horizontal tie-beams. The whole is supposed to have been covered with a flat roof of clay on timber beams.¹

In the inner court, immediately opposite to the gate, stood a large hall or megaron (A) nearly 34 feet wide. The remains and position of the back wall have been completely obliterated, but there is reason to suppose that the total length of the building was about 66 feet. A deep vestibule or porch is formed by the projection of the side walls in front, but neither here nor elsewhere are there signs of pillars or free-standing supports. The side walls rested on a foundation of rough stones with a course of squared blocks on the top, and were continued upwards in crude bricks alternated about every fourth course with planks and occasional cross-ties of wood. At the front end of each wall is a carefully worked stone base on which stood six timber vertical strips.² These are regarded by Dörpfeld as prototypes of the pilasters which decorated the antae of the classic styles. The doorway in the centre of the wall which formed the back of the vestibule was about 13 feet wide: there are no signs of doorposts, though charred remains seemed to indicate a wooden framing or architrave, and the opening may have been closed by either doors or a curtain. In the centre of the hall, which was floored with hard clay, was a low circular platform of

¹ Dörpfeld, p. 83.

² *Ibid.*, p. 88. It was at first supposed that this building and others like it were temples; but their similarity to the megara of a later date has disposed of this idea.

the same material about 13 feet in diameter, which was no doubt a hearth. The height of the walls is unknown and the construction of the roof is doubtful.¹ From the remains, found elsewhere, of charred timber and burnt earth, it is evident that flat roofs were formed of layers of reeds placed across rafters with an



Side- and Cross-wall



Plan

TROY II: WALLS OF THE MEGARON

Brick and timber on stone footings. (Dörpfeld.)

outer coating of clay which, in order to carry off rain, must have been at least slightly raised in the middle.

¹ See Dörpfeld's remarks on his pp. 41, 42, 89. The difficulty about a flat roof is that in the absence of any interior supports, the beams which spanned 34 feet must have been of extraordinary length and thickness. A possible alternative may have been a shallow gable or trussed roof which could be constructed of lighter and shorter material. The discovery in the rubbish of huge copper rivets, each weighing about $2\frac{1}{4}$ lb., suggests that the roof was con-

There was probably an aperture above the hearth to carry off the smoke and admit light.

On the east side of this building, and hardly two feet distant from it, stood a smaller one (B), similarly constructed but comprising, besides the open vestibule, an ante-room and an inner hall, thus assimilating its plan more closely to the halls of a much later period, which will be described in a future chapter. There are some remains of a similar building on the west side of the large hall, and of many other structures lying towards the east and west ends of the site. Remains of underlying foundations, which cross each other at various angles, show that the whole of this early fortress underwent a drastic alteration more than once.

The use of crude brick in all the upstanding structural work is a peculiar feature of this settlement, and has been attributed to influences emanating from Syria or Mesopotamia, and its connexion with Aegean civilization has on this account been questioned.¹ But with the abundance of clay deposited near the outfall of the Simois and Scamander the manufacture of crude brick must have been at that early period an easier process than the quarrying of building stone, even though Hissarlik itself is part of a limestone ridge. Nor need the fact that Egypt, a thousand years earlier, was using quarried limestone and even granite, as well as brick, tell against this assumption, for it is obvious that Egypt had acquired a much earlier experience in the use of

structured of jointed timber of some kind. M. Choisy does not deal directly with this question; but it may be inferred from his remarks on timber construction that beams of sufficient strength may have been obtained by bolting planks together. See his "*Histoire de l'Arch.*," vol. i, pp. 249 *sq.* He expresses the opinion that gabled roofs were introduced into Greece by the Dorians (*ibid.*, p. 365).

¹ Hall's "*Aeg. Arch.*," pp. 131, 139. Meyer (i, § 493) compares the preparation of the site by raising and levelling to that adopted for Chaldean temples.

metal tools and had, moreover, an inexhaustible supply of labour.¹

The rude earthenware of this settlement and the occasional occurrence of stone implements are evidence that notwithstanding the artistic quality of the jewellery found by Schliemann, which may not have been of native production, the general culture of this corner of the Aegean was still in that elementary stage which is designated as Early Minoan. But its history extended, it is supposed, over five centuries, and its remains illustrate a wide span in the growth of social life. There is no clue, unless it be found in the growing power of Crete, to the catastrophe or hostile raid which caused the destruction of this stronghold by fire and left the site a heap of ruins. Upon these ruins a less wealthy community established a new settlement, making partial use of the remains of the walls; and at later dates two more periods of communal occupation are distinguishable before the hill rose again to importance and to undying fame as the site of the historic Troy.

¹ Dörpfeld, pp. 35-6. Brick was used in Egypt before stone, though the latter was abundant, and it may be assumed that this was generally the case, until the use of hardened metal became known. See "Arch. of A. Egypt," pp. 21, 23.

CHAPTER IV

THE ADVANCE OF CRETE

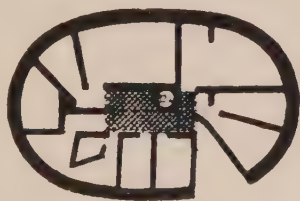
TOWARDS the end of the Early Minoan Period, whilst the Second Troy was still flourishing, Crete also had emerged from primitive conditions and appears to have taken the lead amongst the islands in external influence and internal progress in the arts of life. Its inhabitants developed a peculiar culture, which, though not free from some penetration from Egypt and probably based originally on a heritage from the Anatolian mainland, was developed on independent lines and eventually spread to Peloponnesus and more distant regions on the west and north. Notwithstanding the fact that the extant ground-plans of the earliest Cretan dwellings are rectangular, it is conceivable that the curvilinear form, which is instinctively adopted by the constructors of primitive dwellings or huts, may have left a kind of tradition which so far as Crete is concerned is chiefly evident in some of the tombs.¹ In other localities there is more distinct evidence of the prevalence of curvilinear plans even when larger or more substantial structures were in question; and when several rooms were required the building assumed the form of an agglomeration of circular chambers such as is shown in a frequently illustrated stone model found in the island of Melos.²

¹ Cf. R. M. Dawkins on Palaikastro, "B.S.A.," vol. xi, pp. 258 *sq.*

² Remarkable examples of agglomerated curvilinear plans, dating from the Stone Age, have been found in the islands of Malta and Gozo. See Excavations by Prof. Zammit at Hal-Tarxien, Malta, "Archaeologia," vols. lxxvii, lxxviii, and lxx. The same kind of plan has been found in Britain; see Lukis, "Prehistoric Stone Monuments: Cornwall" (see "Arch. of A. Egypt," p. 6).

The actual process of transition from curvilinear to rectangular planning is illustrated in the group of primitive dwellings at Orchomenos in Boeotia. Here the earliest huts were circular, about 20 feet in diameter, the walls being of crude brick on a foundation of small stones. In other cases they are oval at one end and rectangular at the other. Later examples are entirely rectangular with several divisions.¹ A curious and much later illustration of an intermediate form is found in the plans of the two early temples at Thermon in Aetolia, which seem to be due to a local survival of primitive methods of building.² In

some such way may be explained the ground-plan of a house at Chamaizi (Sitia) in Eastern Crete, known as the Oval House, which closely approximates to a regular ellipse, the axes of which are respectively 73 and $47\frac{1}{2}$ feet in length.³ One striking fact about it is that it appears to



PLAN OF THE OVAL HOUSE AT CHAMAIZI. (Noack.)

have had in the centre a rectangular open court entirely surrounded by irregularly shaped covered compartments with straight dividing walls. Both in size and accommodation it shows a considerable advance on any other building of the same kind, and it is generally assigned to the first part of the middle Minoan period. The roof might have been either ridged or flat with radiating rafters at the ends. Though the house remains unique in Crete it may reasonably be supposed to have been derived

¹ See Wace and Thompson, "Prehistoric Thessaly," p. 195.

² See description and plan in "Hellenic Architecture," pp. 65-7.

³ First described by Dr. Xanthoudides in "Ephemeris Archaio logike," 1906. It is the subject of a special treatise by Dr. Noack, "Ovalhaus und Palast in Kreta," 1908.

from an earlier type; but that it represents, as Noack minutely tries to show, an elementary form from which the plans of the palaces were developed is an assumption which is not supported by any collateral evidence.¹

Technical progress in construction may be traced in many tombs which have been excavated. There are the remains of an early tholos, or beehive-shaped tomb, in the neighbourhood of Hagia Triada, near Phaestos, which probably dates from the early Minoan period; but from various cemeteries which have been explored it appears that no special form of tomb was characteristic of any particular epoch. The rectangular form is general in the north and east, whilst the circular plan is more commonly found in the south, and near the central cross road from Knossos to the south coast. It is probable that the different forms which occur simultaneously indicate some tribal difference or ancestral custom.² The shallow graves or cists mentioned in chapter ii (*ante*, p. 7) were of a form which would naturally be adopted where the soil was hard and the surface fairly level. What are known as chamber-tombs, consisting of an artificial cavity in the side of a hill, and approached by a narrow passage or cutting, would be more likely to suggest themselves in a hilly district. In places where the soil was comparatively light and the surface level a modified combination of the two forms would result in what is known as the pit-cave tomb, consisting of a deep shaft with a side chamber hollowed out at the bottom for the reception of the body. This form is akin to the mastaba graves of

¹ Sir A. Evans rejects Noack's view on the ground that the earlier palace at Knossos was rectangular in its general plan though of the same period as the Oval House. See "Palace of Minos," i, p. 147.

² See Sir A. Evans' description of the cemetery of Zafer Papoura, nearly half a mile north of Knossos. "Archaeologia," vol. lix, p. 410.

Egypt, and the fact that similar burials have been found in Cyprus, Syria, Tunisia, and Sicily¹ seems to indicate that it was an early form of sepulture common to a widely spread race.

The chamber-tomb is obviously a development of the natural cave and was probably evolved *pari passu* with the dwellings of the living, which will explain the fact that "the round or elliptical form of chamber-tomb is typologically the earlier."² To preserve the cavity it was sometimes necessary to line it with masonry in such a way as to prevent the surrounding earth from falling in: hence the cupola-like form which was obtained by diminishing the diameter of each circular course of masonry until the aperture at the top was so small that it could be closed by a single stone. When the tomb was rectangular it was roofed with a barrel vault constructed on the same principle of overlapping or corbelled courses.

The old tholos at Hagia Triada was vaulted in this manner, though only the lower courses are left. The circular area of the floor has a diameter of about 29½ feet: it was approached by a walled passage or dromos, in the sides of which were ten small recesses. It seems to have been used as a tribal sepulchre or a common ossuary, for within the tholos some 200 skeletons were piled whilst the recesses contained more than fifty others. Numerous objects, small figures, shells, vases of granite, marble, and steatite, and blades or weapons of obsidian and copper indicate an early Minoan date for at least some of the burials.⁴

¹ "Archaeologia," vol. lix, p. 405.

² *Ibid.*, p. 394.

³ The corbelled vault was used in Egypt in the early dynasties. It is found in the gallery of the Great Pyramid, in the small pyramids at Abydos, and in temples of the XVIIIth and XIXth dynasties, as in that of Seti I. See "Arc. of A. Egypt," p. 136.

⁴ Dussaud, p. 30. The tholos has a rectangular area in front with a short dromos, the floor being about 8½ feet below the surface.

Similar tholoi have been found at Kumasa and Porti and elsewhere in or near the Mesará plain, and one rather exceptionally, at Praesos, in the east of the island.¹ It is to be noted that they are generally built on the surface of the ground or very slightly below it, so that no dromos was necessary, though in some cases a small rectangular area, sunk in front of the door, was required. The dome was probably covered with earth so as to appear externally as a mound. They seem to have been generally used as communal graves; but this form of tomb was disused in the course of the Middle Minoan period.

¹ See Seager, p. 10; "Ts. and M.," p. 116 n.; "B.S.A.," vol. viii, p. 240. The whole subject has been recently illuminated by Dr. Xanthoudides in his work, "The Vaulted Tombs of Mesará," translated by Prof. J. P. Droop, with a preface by Sir Arthur Evans. The author describes the remains and contents of sixteen excavated or examined by himself in the past few years. More recently still, Sir A. Evans has kindly informed me that he has found the remains of an early "beehive" ossuary at Krasi near the north coast. In an article entitled "The Ring of Nestor" ("J.H.S.," vol. xlv, p. 46), he says: "That the construction of circular vaulted chambers continued in Crete to the beginning of the Late Minoan Age is shown by the recent discovery on the Minoan site of Arkhanes, near Knossos, of remains of a finely built monument of that class, designed for a well-house and belonging to the very beginning of the first Late Minoan period." Arkhanes was the site of a considerable building, about an hour's ride above Knossos, possibly the Summer-Palace of Knossos. See "Antiq. Journal," vol. ii, p. 320. A curious circular structure exists in Andros, the most northerly of the Cyclades. It is a cylindrical tower about 60 feet high, built of closely jointed stones of great size. Its basement consists of a domical chamber vaulted in the corbelled manner of the Cretan tholoi, but the walls are about 6 feet in thickness. The date remains uncertain. See "Aegean Days," by Prof. J. I. Manatt.

CHAPTER V

THE MIDDLE MINOAN PERIOD (c. 2100-1600 B.C.)

THE term Middle Minoan is applied to a stage in Aegean civilization during which it is evident from various indications that Crete attained to a high degree of culture and of skill in artistic crafts. The ceramic remains form the basis of Sir A. Evans's chronological scheme, and a remarkable improvement and elaboration in design are special features of this period. The best Cretan pottery of the earlier era consisted of a dark glazed ware decorated with simple geometrical patterns of parallel straight or dotted lines, zigzags or chevrons, and of a burnished ware with a red and black mottled surface produced by the process of hardening in an open fire. The use of metal tools had led to the manufacture of fine stone and marble vases which in form and finish were far superior to the earthenware. But the invention and introduction of the potter's wheel and kiln, and the realization of the decorative effect of curved and spiral lines gave a fresh impetus to ceramic art.¹ Vessels of many kinds and various shapes were produced, decorated with more freely drawn patterns of curves, spirals, and rosettes in which various colours are used chiefly on a dark ground. Such pottery is known as polychrome, and in its more developed form the surface is sometimes relieved in knobs or raised patterns; whilst in other cases the paste is fined down in substance almost

¹ Hall, "Aeg. Arc.," p. 74, and "N. E.," p. 41. The use of the spiral as an ornament has been mentioned above, p. 10 n.

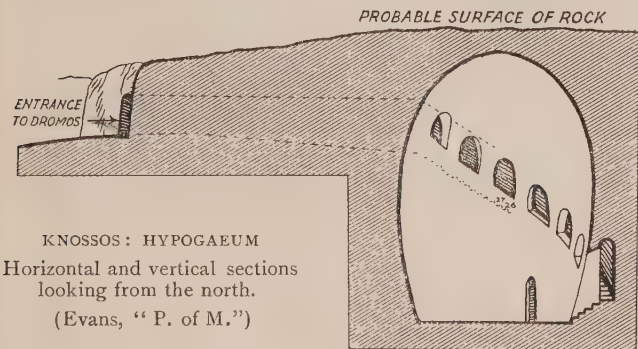
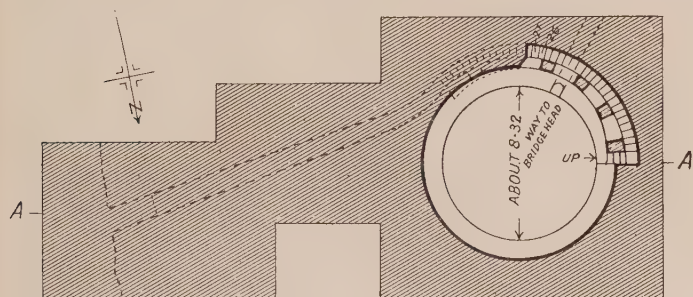
to the tenuity of an eggshell. In all these forms it is known as Kamáres ware from the name of the village on Mt. Ida near which the first considerable deposit was found. It was the discovery of some of this Cretan ware in a XIIth dynasty grave at Abydos that helped to establish a chronological relation between the Aegean culture and that of Egypt, and though the actual dates remain uncertain it shows that the first flourishing period of Crete coincides with the great days of the Middle Kingdom in Egypt—possibly about 2100 B.C.

It is practically certain that concurrently with this artistic development Crete became, under wealthy and powerful rulers, an important political centre in the eastern Mediterranean. Palaces were built at Knossos and Phaestos, the former on rising ground a few miles south of the modern port of Candia, at the centre of the northern coast; the latter on the south side of the mountain range which culminates in the snow-capped Mt. Ida. The plans of these palaces as they are now seen show their arrangement at a late period, when they had undergone considerable alteration or reconstruction, but remains of the earlier buildings exist beneath the later work, and in the case of Knossos are partly incorporated with it.¹

The earliest indication of any important constructive work on the site of the palace at Knossos consists in a large bottle-shaped cavity at the south end of the hill. It was about 28 feet in diameter at the floor, expanding a little higher up and finished in a cupola, about 52 feet high. There was a stairway cut in the

¹ When the palace at Phaestos was rebuilt in the Late Minoan period, most of the earlier foundations were levelled and covered with a thick layer of concrete. In this it differs from Knossos, where the basements were largely re-used. There some of the floor levels were raised from time to time affording in places a continuous stratification up to the middle of the Late Minoan period when the building assumed its final form. (See Evans, pp. 211, 319.)

rock on the south and west sides of the cavity, which led upwards to a tunnel or gallery apparently communicating with a building on the hill. It had, however, been filled up in order to support the southern



KNOSSOS: HYPOGAEUM

Horizontal and vertical sections
looking from the north.

(Evans, "P. of M.")

SECTION A A

porch of the first large palace, and from the character of the sherds found in it, it is evident that it contained much of the soil removed from the top of the hill when it was first levelled. The cavity therefore must be older than the palace that was built in the Middle Minoan age.

It is difficult to avoid the conjecture that it may have been a den for some captive beasts ; but there is also the possibility that it was a subterranean entrance from the ravine on the south to the buildings on the hill before the later south gate with its stepped approach was



Evans, "P. of M."

KNOSSOS : ROUNDED ANGLE OF PART OF THE EARLY PALACE

before the west side of the court was brought forward. It appears to correspond with the curved footings which indicate the south-west angle (see plan, p. 52.)

made. In the absence of further evidence its object still remains indeterminate.¹

The palace on the levelled hill appears, from the

¹ That lions were kept for purposes of "sport" is evident from a seal which shows a lion with rings on its legs attacking a bull (Sir A. Evans, "J.H.S.," vol. xlv, p. 9).

foundations which still exist, to have consisted of several large sections or *insulae* with strong defensive walls (in some cases rounded at the angles) arranged round a rectangular open space. The whole was additionally protected on the north by a massive but isolated tower or keep, the basement of which, divided into six cells or dungeons 25 feet deep, was found below the foundations of later buildings.

The central court was entered from the north by a narrow passage dominated by this keep, but the principal landward entrance was by a passage between two blocks of buildings at the south end of the court. It was in connexion with an important road which crossed the ravine on the south by a viaduct, and was the chief means of communication with the south coast of the island. The bridge-head and piers of this viaduct, which were discovered and laboriously disinterred by Sir A. Evans as lately as 1924, are of ponderous masonry, and form, in his opinion, the most imposing structure that has as yet come to light in Crete. The date is placed in the first Late Minoan period. On the north slope of the ravine were found remains of a pillared portico ascending by broad steps in four returned flights to the south porch, which must in its complete form have formed a stately entrance to the palace. Its details have not yet been fully ascertained.

Further exploration beyond the southern end of the viaduct, where the surface was covered with a hardened deposit of gypsum from neighbouring springs, disclosed the remains of houses of the Middle Minoan period, and further along the road were discovered the lower walls and basement of a long building standing back from the road with a forecourt. It is supposed to have been an inn or guest-house for travellers visiting the town and palace. One of its chief features was an elegant loggia decorated with coloured walls and a frieze of birds

naturalistically portrayed, with an adjoining bath-chamber.¹

The road to the south skirted the west side of Mt. Juktas (five miles from Knossos), on which there was a sanctuary surrounded by a wall of cyclopean masonry somewhat earlier in date than the palace.

That the separate sections or *insulae* which formed the earlier palace on the hill of Knossos were contained within strong defensive walls is clear from the examination of the early Middle Minoan masonry,² but it is evident that early in the second part of the Middle

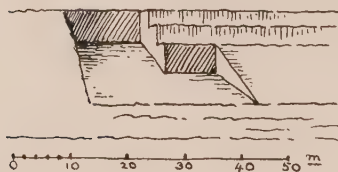


DIAGRAM OF EXCAVATION ON THE
EAST OF THE HILL

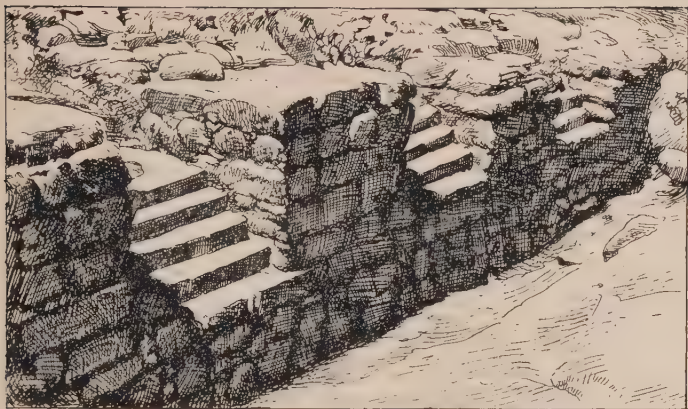
Minoan period a remodelling of the whole took place, and the various sections were linked up and unified in a connected building, the lines of which, notwithstanding its partial destruction by fire and earthquake and sub-

sequent reinstatement with considerable alteration, can still be traced.

In the consolidation of the various blocks of buildings the most important constructional alterations took place on the east side of the central court. Here the hill-side sloped rapidly towards a stream (Kairotas) and was divided into level terraces by a series of supporting walls. But in order to provide a more convenient and protected site for the royal apartments the side of the hill in its central part was cut away from the top to a depth of 26 feet, besides a smaller rectangular section on the north side of the principal cutting. The sides of

¹ These recent discoveries are described in "The Times," 16 and 17 Oct. 1924.

² See Evans, pp. 129 *sq.*



J.W.

PIER-BASES OF THE VIADUCT



J.W.

Reconstruction of the loggia and bath-chamber.

RECENT DISCOVERIES AT KNOSSOS

(By permission of Sir A. Evans.)

these excavations are supported by heavy masonry, and there was a staircase at the back of the larger one giving access to various floors and to the level of the court; but changes made at later dates have to some extent obscured the form and plans of the buildings which originally occupied this side of the palace.

It is probable that the early history of the palace at Phaestos was similar to that at Knossos, but this is mainly conjecture, for the Late Minoan builders discarded most of the old foundations before beginning the new palace which corresponds with the restored building at Knossos. The result shows a general similarity between the two—a long, rectangular, central court, the major axis of which runs north and south, surrounded by a complexity of rooms and corridors, with another open space on the west, unenclosed on the farther side.

There is abundant evidence in both places to prove that in the earlier half of the Middle Minoan age the culture of the Cretans had reached a very high level. Apart from the skill and taste shown, as already mentioned, in ceramic art, the common use of earthenware waterpipes and a well-developed system of drainage indicate a practical regard for health and sanitation far in advance of that of much more modern days.¹ Well-formed bronze daggers and implements give evidence of the practised manipulation of alloyed metal, whilst numerous engraved seals and scarabs sometimes imitated from Egyptian objects show skill in its use in minor arts. The prevalence of ornaments in gold, which was apparently more common than silver, testifies to the general wealth of the community. At the same time an advance in the character of the pictographic writing suggests that mental training and education were advancing, and kept

¹ See Evans, pp. 142, 227.

pace with skill in handicrafts and facility of expression in art.

The relation between the two palaces remains for the present obscure. Whether they were the seats of two independent governments, or whether the ruler at Knossos exercised an overlordship or an occasional leadership in a league of semi-independent local chiefs remains a problem which may be solved when a key has been found to the various forms of script which occur on seals and clay tablets. The greater extent of Knossos, its identification with the Labyrinth of later legend, and the tradition which ascribes to Minos the position of a powerful ruler and lawgiver whose name became incorporated in Greek mythology, point to a final predominance which at the time of the building of the palaces may already have begun to assert itself. All that is certain is that the two buildings date from about the time at which the prehistoric fortress of Troy (II) fell, and co-existed apparently under peaceful relations, until towards the end of M.M.ii some disaster, the occasion of which is unknown, but which was apparently only a temporary calamity, caused the destruction of both palaces by fire—(c. 1800 B.C.).

CHAPTER VI

THE MIDDLE MINOAN PERIOD—CHAMBER TOMBS

IT is obvious that the catastrophe which overwhelmed both Knossos and Phaestos in the middle of the Middle Minoan period involved no permanent set-back to the progress of civilization in the island; for before the end of that period (*c.* 1700) the palace of Knossos had arisen again in increased splendour: and though the restoration of Phaestos was somewhat longer delayed a small palace or royal villa was founded on a site in its immediate neighbourhood known in modern days as Hagia Triada. To the same period is assigned the rise of the town of Gournia,¹ situated on the isthmus of Hierapolis, near the east end of the island. It is to be noted that in this town with narrow streets and crowded houses and a small palace or chief's residence there are no circuit walls; nor is there any attempt at fortification in the new palaces of Knossos and Phaestos unless it be that some strongly built bastions at the north entrance of the former imply precaution against raids by pirates or marauders from the islands on the north. Their masonry appears to coincide in date with the rebuilding of the palace.²

A sidelight on the social state of Crete, and also of the constructive methods in use at this period is found in the remains of one of the few tombs which appear to be coeval with the restored palaces.³ It is on the

¹ See chapter xiv, *post.*

² Evans, p. 394.

³ Excavated by Sir A. Evans and Dr. Mackenzie, and assigned to M.M.iii. See "Archaeologia," vol. lix, pp. 526 *sq.*

high ground known as Isopata, near the ancient road from Knossos to the sea. It consists of a rectangular subterranean chamber, about 26 by 21 feet in area, at the outer or eastern end of which is a narrow forehall with a recess on either side. The whole was lined with blocks of limestone, some of considerable size, which led to the tomb being used as a quarry by later builders. The upper portions have consequently disappeared, but



PLAN OF THE TOMB AT ISOPATA
("Archaeologia.")

enough remains to show that the roof was formed by gradually approximating the courses of the side walls and so constructing a tunnel vault the surface of which was made smooth by chamfering the projecting angles of the masonry. The ends of the chamber were vertical walls. It is calculated that the height from floor to the closing slabs at the top would be about equal to the length of the chamber, viz., 26 feet.¹ As this must have

¹ This relation seems to have become usual in the circular tholoi of the continent, where the height of the dome is about the same as the diameter of the floor.

caused the top of the structure to extrude above the surface of the soil about 6 or 7 feet, it is probable that the whole was covered by a considerable mound of earth sufficient to form a conspicuous monument. The sepulchre is approached from the east by a dromos or uncovered passage with perpendicular sides cut in the soft rock of which the hill consists. The actual grave was a narrow cist excavated in the floor of the chamber towards the north side. It was originally closed by a slab of stone resting on the rebated edges, and covered by the cement which forms the floor: but it had been rifled at an early date, and the tomb used for later interments. A fine porphyry bowl, another of diorite, and a large pin of gold—overlooked by despoilers—indicate that the first burial was accompanied by a valuable treasure, and that the tomb was, as its discoverer suggests, a royal sepulchre coeval with the building of the palace. There are, however, numerous indications that it shared its vicissitudes, and finally became a common grave or ossuary.

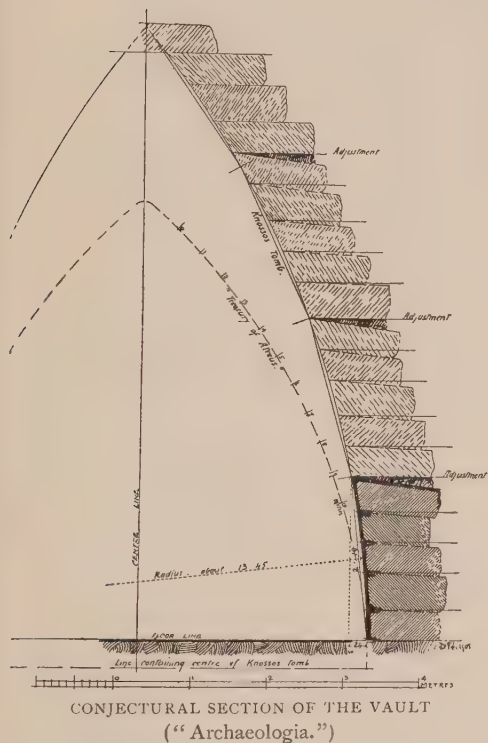
The masonry of the inner chamber in all but the lowest course consisted of stone blocks laid as "headers," *i.e.*, with their length perpendicular to the surface and slightly thinner towards the *outer* end and so as to give the bedding a downward slope outwards and counteract a tendency to slip inwards.¹ As this obviously could not be continued to the top without giving the upper courses an impossibly acute chamfer, it is supposed that the outward declination of the courses was adjusted at intervals by levelling them up at the back; and it is possible that the inner surface of the vault was a

¹ This expedient shows how far the builders of the period were from realizing the principle of the radiating arch in which cohesion is maintained by placing the thin end inwards. See Mr. T. Fyfe's architectural note in Sir A. Evans's paper in "Archaeologia," vol. lix.

succession of planes rather than one of continuous curvature. The architectural significance of this tomb lies in its general affinity to the later domed tombs of

the continent.

It is true that the rectangular plan, which is also common in the Mycenaean age of Greece,¹ and the existence of a fore-hall² constitute important differences in detail; but the general form of a subterranean chamber approached by an open dromos; the method of vaulting, and the fact that the circular form also occurs leaves little room for doubt that the substitution of tholoi for the



earlier shaft graves at Mycenae was directly due to Cretan influence.

¹ See "Ts. and M.," pp. 131, 132.

² The fore-hall, as Sir A. Evans points out, is a feature in Egyptian sepulchres of the same period.

Six other dromos-tombs containing interesting ceramic remains were found in the immediate neighbourhood, but only one, resembling in shape, stone lining, and form of roof on a smaller scale the Royal Tomb, can be attributed conjecturally to the same period. The others which are roughly excavated in the rock are evidently of Late Minoan date, but one of these has peculiar features which give it some architectural interest.¹ The doorway, which is slightly recessed or rebated, is of unusual form in having a semicircular head. The chamber is not rectangular in plan, but widens towards the back, and from the back wall a deep buttress or jamb projects, evidently to support the wider span of the roof which was cut with a concave curve in the soft rock. On the face of the projecting jamb is incised the form of a half-column, which, unlike some Minoan columns, does not diminish downwards. Its capital has completely disappeared with the roof; but the shaft suggests in a crude way the pilasters which terminate antae and projecting walls in later architecture.

On the west side of the chamber (*i.e.*, on the right hand of the doorway) is a raised platform about 7 feet 6 inches wide at the centre, though it widens slightly from front to back of the chamber, and in this is the cavity of the grave. On the other side is a wall bench about 3 feet 6 inches wide, returned in the recess at the back, which is not so deep as that on the west side of the pilaster. The actual floor space, excluding the small portion in the recess, was only about 13 feet long by 7 feet wide; on it were found a number of earthenware vessels with polychrome designs, bronze knives, beads, gold-plated studs, and several double axe-heads of bronze which, with other objects of a ritual character, indicate that the tomb was probably opened from time to time for religious purposes.

¹ Described by Sir A. Evans as the "Tomb of the Double Axes" ("Archaeologia," vol. lxxv, pp. 33 sq.).

A considerable number of unlined chamber-tombs, with approaches cut or tunnelled in the rock, were found in the cemetery of Zafer Papoura, near Knossos, but these are of a very late Minoan date. None of them were circular in plan, though some had rounded angles. A few contained valuable objects which testified to the high rank of their deceased tenants. The exploration of this cemetery seems to prove that the later Cretans of the northern coast had a general preference for a rectangular plan in their graves as their more primitive forefathers had in their houses, and also shows that the various forms of shaft-grave, pit-grave, and chamber-tomb were used simultaneously to the latest date.

CHAPTER VII

THE LATE MINOAN PERIOD (*c.* 1600-1300 B.C.)

NOTHING gives more striking evidence of the generally peaceful development of Crete during the next two or three centuries than the absence of any systematic fortification either in the towns or in the palaces as they were rebuilt after they were destroyed by fire towards the end of the previous period.

The restoration of the palace at Phaestos was perhaps postponed to the building of the royal villa at Hagia Triada, but at Knossos constructive activity is more apparent, for soon after the restoration of the palace supplementary buildings, probably of a royal kind, were also erected. What is known as the Little Palace was founded at a short distance to the west of the principal residence, whilst a small but luxurious house which is regarded as a royal villa was built on the sloping bank of the stream at a few furlongs distance on the north-east.

To the long-continued freedom from hostile irruptions—to which the history of Egypt offers some parallel—may be attributed the peculiar and self-centred character of Cretan art. It shows elements obviously influenced by that of Egypt, and less obviously by that of Asia, but putting aside objects which were directly imported there is no evidence of a close imitation of foreign work. Egyptian motives are absorbed and transmuted into forms which have a distinct character which ultimately exercised an influence of its own not

only on other islands and the coasts of the Aegean, including Egypt itself, but even in western lands still more remote.

Though the diffusion of this culture was no doubt promoted by racial affinities, it is evident that it was seldom facilitated by a corresponding immunity from hostile attacks. Whilst the rulers of Crete were living apparently in peaceful luxury and building stately palaces and pleasure-houses, Phylakopi, the chief town of Melos, was rebuilt about the same time as the palace at Phaestos with strong defensive walls. In the island of Siphnos Dr. Tsountas disinterred a fortified town of earlier date: and a still earlier one which had a triple wall and which must have coincided approximately in date with the second Troy was found at Chalandriani in the smaller island of Syros. There is a certain similarity in all these island fortifications: all have in common an exterior breastwork or low wall which, in the case of Phylakopi, protected the outer edge of a ditch which lay immediately beyond the main wall. This latter was rebuilt or strengthened at a subsequent date, but the ditch and exterior wall remained as before.¹

Within the walls fragments of painted stucco, found in the deposits of the earlier period, show that the Melian

¹ See *post*, chapter xiv, and "Phylakopi," p. 256. The primitive neolithic strongholds, from which these early Aegean fortifications were developed, are illustrated by Messrs. Wace and Thompson's researches in Thessaly. At Dbimini, near Mt. Pelion, the village was protected by a number of ring-walls of a moderate height at varying distances, the strength of which lies not so much in the actual walls of rough stones as in the successive lines of defence, and in the narrow tortuous alleys by which the centre of the village was gained. A primitive form of megaron, with two supports in front, and two near a central hearth, was also included. See "Pre-historic Thessaly," pp. 79-81 and 218. This sort of defensive work is shown on a grander scale in the English prehistoric earthwork known as Maiden Castle in Dorset.

artists were not far behind their contemporaries of Crete in skill.¹

The art of the Aegean generally was no doubt influenced like that of other nations by religious ideas and beliefs, but less obviously so than in countries like Egypt, where the most important buildings were those devoted especially to religion. In the communities now in question, the absence of such buildings is conspicuous, and as there is no legible and contemporary documentary evidence as to the nature of the prevalent religion, it can only be inferred from material objects and the remains of architecture and decorative art. But it has become evident that Crete and other islands shared with the greater part of Anatolia the worship of a female deity known in later mythologies as Kybele or Rhea, and that there existed perhaps as a heritage from more primitive times a subordinate veneration for supernatural powers embodied in the cult of sacred trees and stone pillars.²

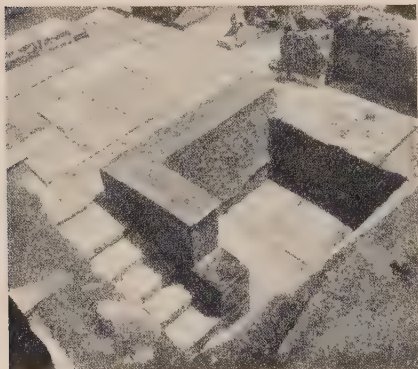
In course of time there was a tendency to multiply and personify other deities which represented the mysterious powers of nature, but of this there is less certain evidence than in the art of the Asiatic mainland. There is, however, little doubt, from the researches of Sir A. Evans, of the existence at Knossos of the cult of a snake goddess with female votaries, illustrated by small figures in coloured faience of a very remarkable character.

At the same time there is no definite evidence of the existence of any priestly caste, and the only localities which seemed to be reserved exclusively for religious purposes were caves and roughly built shrines in the hills, or in a few instances small hypaethral enclosures within the

¹ "Phylakopi," p. 261.

² See Evans's "Mycenaean Tree and Pillar Cult," "J.H.S.," vol. xxi, and "Palace of Minos," p. 161; also references in "Hellenic Architecture," pp. 57, 58.

limits of a town. There is, however, reason to suppose that whilst the king himself had a priestly character the palaces also had some of the sanctity of a temple, at least in special portions which were reserved for devotion or religious rites. Tank-like cavities in the floor of certain rooms, with a few steps descending into them, were undoubtedly sanctuaries in which some rite of initiation or purification was prescribed for those who sought favour or protection in the palace. The double-



SANCTUARY IN THE PALACE OF PHAESTOS
(Mosso.)

headed axe, or *labrys* (whence the term labyrinth is supposed to have been applied to the whole building), appears constantly as a religious emblem, as it also does in many parts of western Asia Minor. Quadrangular stone pillars incised on the sides with rough representations of this symbol indicate,

like consecration marks, the sanctity of particular rooms in the basements of houses. Another symbol, in shape like a pair of bull's horns, occurs frequently in decorative designs, and appears to have had some consecrating significance. A bull's head with horns is often represented in works of art, and it may be inferred that the bull itself had a semi-sacred character. Lions also and doves appear in association with the worship of a female deity. It was the discovery of a hoard of many miniature objects of this kind which led Sir A. Evans to attribute

a specially sacred character to certain portions of the palace of Knossos.

The ground-plan and details of the building as they first came to light represent something more than the edifice as it was restored after the fire in the Middle Minoan period, for it underwent considerable alteration



11715

KNOSSOS : PILLAR INCISED WITH DOUBLE AXES

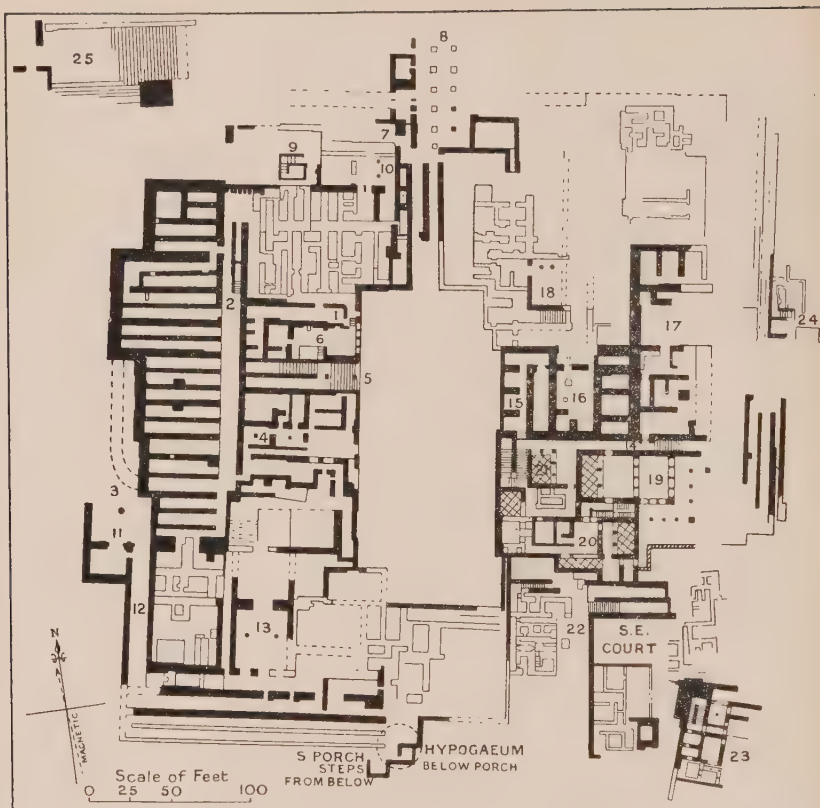
during the following centuries. Some of its most interesting features, notably the throne-room of Minos, can only be dated from its latest years (*c.* 1450 B.C.). As finally remodelled it seems to speak the last word in Cretan architecture. Moreover, numerous specimens of the minor arts, of wall-painting, moulded and coloured pottery, ivory carving, metal and glyptic work disinterred here and elsewhere—notably at Hagia Triada—

after the lapse of thirty-three centuries, illustrate the culmination of this Minoan culture. Within a few more decades another sudden and unexplained catastrophe—probably a hostile invasion from the Greek mainland—overwhelmed the whole island and reduced the towns and palaces to ruins.¹

It is true that there is abundant evidence of a later occupation of some of the sites, but it is of such a nature as to accentuate the degradation of their former splendour, and prove the dissolution of a sovereignty which, with its culture, passed to the mainland, and is now identified with the Mycenaean civilization of Peloponnesus.

A general history of this culture and a minute account of the various phases of the royal buildings at Knossos will be found in Sir A. Evans's comprehensive work, "The Palace of Minos." In the following chapters, therefore, no more need be attempted than to mention the most important features that have been spared by time and restored by the skill, acumen, and liberality of their discoverer, and to indicate as far as possible their relation to or place in the general history of architecture.

¹ It may here be mentioned that the French School at Athens has recently disinterred a palace at Mallia-Vrakhas, near the north coast of Crete. In plan it is said to be similar to the palaces at Knossos and Phaestos ; but facing the central court there are the remains of a raised platform approached by steps with an altar upon it, a new feature which, when the details are published, will furnish material of more than ordinary interest for the student of Minoan culture. See "B.C.H.," 1921, p. 535 ; 1922, p. 525 ; 1923, p. 532 ; 1924, p. 492.



SKETCH PLAN OF THE PALACE OF KNOSSOS
(based on that of Mr. T. Fyfe)

Cribb & Co. del

- | | | |
|--|---|---------------------------|
| 1. Curved angle of the early frontage. | 9. Lustral basin. | 17. Court of Stone Spout. |
| 2. Corridor of Basement. | 10. North-west portico of early palace. | 18. North-east Hall. |
| 3. Footings of early west wall. | 11. Western portico. | 19. Hall of Double Axes. |
| 4. Pillar rooms in basement. | 12. Corridor of the Procession. | 20. Queen's Megaron. |
| 5. Grand stairway from the court. | 13. Propylaeum. | 21. Columned Hall. |
| 6. Throne-room and ante-room | 14. East-west corridor. | 22. Court of Sanctuary. |
| 7. Angle of outer north wall. | 15. Corridor of the Bays. | 23. South-east house. |
| 8. Pillars at north entrance. | 16. Area of drain-heads. | 24. East bastion. |
| | | 25. Theatral area. |

* * * In the above plan some alterations have been made to accord with recent discoveries; but as exploration is still in progress, especially in the southern portion of the site, it must in any case be regarded as provisional, and liable to emendation in many particulars.



[*B.S.A. An.*

KNOSSOS : PILLARS AT THE NORTH ENTRANCE

CHAPTER VIII

THE PALACE OF KNOSSOS—THE WESTERN WING

IT is supposed that the hill of Knossos was one of the earliest sites occupied in Crete, and it is evident from the thickness of the neolithic deposit that it must have been inhabited for many thousands of years. When in the Middle Minoan period the summit was levelled, a number of smaller houses, and possibly an earlier burg, or chieftain's dwelling, were cleared away in order to make room for the more spacious palace which afterwards occupied the summit and a large part of the eastern declivity of the hill. The populace would then be housed in the neighbourhood on the west, where remains of smaller dwellings have been found.¹

¹ Mr. Hogarth's exploration of the town of Knossos is described in "*B.S.A.*," vol. vi.

The general plan of the palace then erected, and the cutting that was made on the east slope of the hill have already been mentioned (p. 34). But after the fire, though the basements were to a large extent used again the upper buildings underwent considerable alteration and were reconstructed from time to time, especially towards the later days of Cretan prosperity. One of the most important of these reconstructions consisted in bringing forward the whole front of the western wing facing the central court by about 10 feet, which involved the rearrangement of the buildings on that side and by narrowing the court threw its axis out of alinement with the northern entrance.

Amongst the earlier features still remaining in the substructures of the west wing is a long corridor running north and south on the west side of which is a series of seventeen long and narrow cellars, separated from each other by thick walls at right-angles to the corridor. These cellars vary according to the broken line of the exterior wall,¹ from about 76 to 36 feet in length, their width being about 6 feet. In the floors of both gallery and cellars are many small rectangular cists, which were originally intended for the safe deposit of gold and objects of value. At a later date these *kasellai*, as they are called, were closed and the cellars used as magazines for the storage of oil and grain in enormous earthenware jars or *pithoi*, which were in some cases found *in situ*.

On the other side of the corridor, but accessible only by a narrow opening near the south end, was a labyrinthine complex of substructures most noticeable

¹ The exterior wall on the west shows on plan a series of returns or angles which indicate no sort of symmetry in the elevation; but some slabs of stone which remain in the west court and were evidently the footings of a wall, show that in the earlier building it ran in a nearly straight line with a rounded angle at its south end (3 in plan).

amongst which were two small chambers which were no doubt part of the early palace. In the centre of each there still remains a rectangular pillar constructed of four almost cubical blocks of gypsum (see illustration, p. 49 *ante*). These are so placed that they probably served as supports for columns on the upper floor which no longer exists; but the fact that each stone is inscribed on the sides with representations of the sacred double axe, indicates almost conclusively that they had a cultural character, and were regarded, as Sir A. Evans suggests, as Pillars of the House. The supposition that this portion of the palace had some peculiar sanctity is corroborated by the existence in the floor of an adjacent chamber of two rectangular cists containing many objects which appear to have been associated with religious observances¹ and the more recent discovery of a similar repository under the large propylaeum near the south of this wing (13).

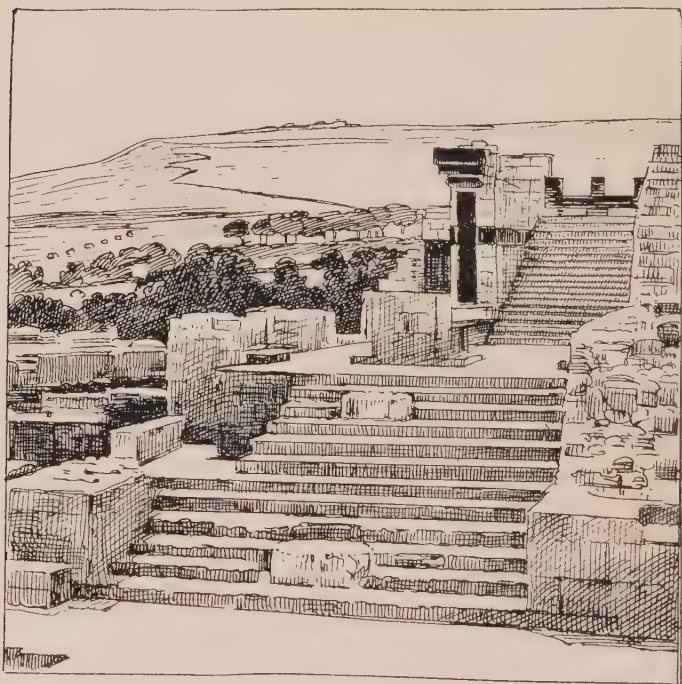
Next to this section of the building on the north were the substructures of a staircase which ascended westward from the court, through a portico with a central column in its front (5). A number of these steps have been replaced or restored. They formed the principal staircase on this side of the palace, and must have led to a large columned hall and other rooms on the main floor. The details of these rooms are mainly conjectural, though column-bases and remains of frescoes which have fallen from them have been found in the basement.²

Immediately to the north of this portico is another which marks the entrance to one of the chief marvels

¹ They include small faience figures of a snake goddess and her votaries, several libation vessels, and a large number of ornamental objects. Facsimiles of many may be seen in the Ashmolean Museum, and of a few in the British Museum.

² See Sir A. Evans's "Palace of Minos," pp. 441-2, and his first reports in "B.S.A.," vol. vii, pp. 21 *sq.*

of Knossos, the discovery of which appealed, perhaps, more than any other to the popular interest and imagination. At the top of four shallow steps which descend



J. W.

Sir A. Evans

KNOSSOS : PORTICO AND GRAND STAIRCASE ON THE WEST SIDE OF
THE CENTRAL COURT, RESTORED

from the level of the central court are the bases of three narrow door-jambs through which lies an ante-room or vestibule, about 19 feet square. In the back of this a double doorway led into the Room of the Throne (6), in

which was found *in situ* what may be regarded as the actual seat of Minos. It was standing against the centre of the north wall, with a stone wall-bench on



THE THRONE OF MINOS
(Mosso.)

either side. Its form is remarkable, for the lobed outline of the back, the semi-elliptical panel on the front, and the imitative framing of the sides suggest to the modern eye late Gothic or Jacobean woodwork rather than any germ of classic art. It seems in any case to be a trans-

lation in gypsum of a wooden type of chair. The room itself appears too small for a state reception room, and the tank-like cavity in the floor opposite to the throne, with a few steps leading into it, similar to, but larger than, that already illustrated (p. 48) suggest that this curious apartment was one in which the king in his hieratic character (which is attributed to him on other grounds) performed or superintended in the presence of select spectators some religious or judicial function. The walls of the room were decorated with frescoes, now partially restored, that on the west exhibiting two strange figures of griffins.

Though amongst all these substructures there is much evidence of the high state of culture at which Crete had arrived, the actual appearance of their buildings can only be dimly apprehended from fragmentary evidence.¹ The narrow passage which gave access to the central court from the north, and which continued in use to the last, was really entered from the west side through a gate-house or propylaeum, where a tower on the north side and bastion on the south seemed to protect it against hostile raiders from the coast. On the east side of the passage is a double row of heavy rectangular pillars of limestone which are supposed to have supported a magazine or warehouse, about 65 feet in length, possibly intended for the storage of imported goods.

Near the south side of this entrance to the palace a pillared porch (10) and fore-hall led to an "initiation-chamber," with a floor-tank similar to those already described. But this area was outside the main north wall of the palace and the use of the chamber may have been superseded by the construction of the throne-room, when this porch was transformed into a sheltered piazza or loggia.

¹ See chapter xv.

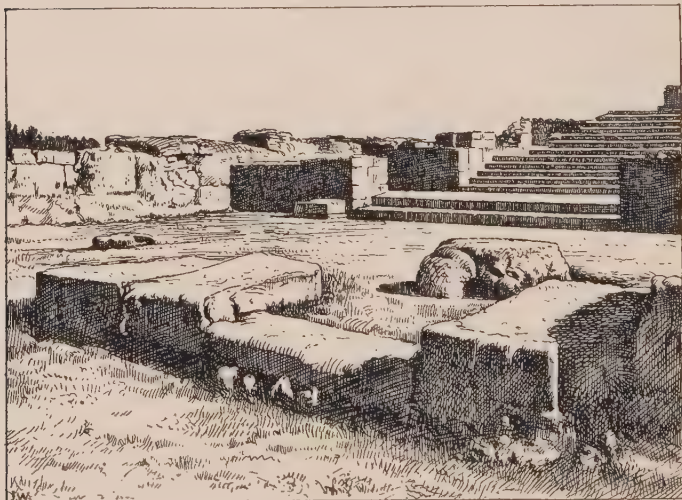
Another porch giving access to the southern part of this western wing was annexed to the west wall from which it projected, facing to the north. It is about 36 feet wide and was probably the principal entrance to the palace from the north and west.¹ Its ground-plan is peculiarly characteristic of this palace architecture of Crete. A circular base of stone shows that there was a wooden column in the centre of its front behind which was a vestibule. In the back wall was a doorway leading into a nearly square chamber 23 feet wide, which may have been a lodge for some responsible official, whilst a second doorway in the same wall opened on a long corridor running southwards to the extremity of the palace building. It was about 11 feet wide, and formed an impressive though somewhat indirect approach to the state apartments in this quarter of the palace. It has been named the Corridor of the Procession from the subject of frescoes which decorated the walls, though little more than the feet of the figures is left. The pavement of the corridor consists of a pathway of limestone slabs, bordered on each side by slate, which had been coated with red plaster. At the farther end the passage turned at a right angle to the left and probably emerged on an open terrace looking over the country to the south, and the main road with its viaduct across the ravine.

On the north side of this open terrace was an imposing gateway or propylaeum of more elaborate plan than

¹ Recent investigations at Knossos have shown that the entrance to the interior of the early palace was at this point and originally faced west. (See "Antiquaries' Journal," vol. ii, p. 323.) But when part of the west frontage was set back it was replaced by a projecting porch facing north. This was again replaced, on an enlarged scale, by the porch and processional corridor which are here described. See Sir A. Evans's report in "The Times," 9 October 1925).



KNOSSOS : FLOOR OF THE SOUTH-WEST PORCH AND CORRIDOR
(Noack.)



7.11.

KNOSSOS : FOUNDATIONS OF THE SOUTH PROPYLAEUM
with the restored stepped ascent to the principal floor of the western
wing. (From a photograph, by permission of Sir A. Evans.)

the western porch.¹ It had two deep side walls, within which, a few feet from the front, two rectangular pillars and responds gave three openings into a nearly square chamber. Here two pillars, of which only the circular bases remain, must have supported a roof. The walls of this chamber appear to have been decorated with frescoes, amongst which was the well-known "Cup-bearer," forming part of the decorative scheme of the Corridor of the Procession.

A wide opening in the centre of the back wall led into a courtyard, on the opposite (north) side of which a broad flight of steps led to state apartments on the upper floor above the substructures which have been mentioned (p. 55).

¹ The western porch and the somewhat later propylaeum in their latest forms are probably not earlier than the L.M. period (Evans, p. 424), though both were amplified from previous structures. There is evidence that the first propylaeum had been handsomely decorated with a dado of marble-like plaques.

RECONSTRUCTED ELEVATION OF GRAND STAIRCASE.

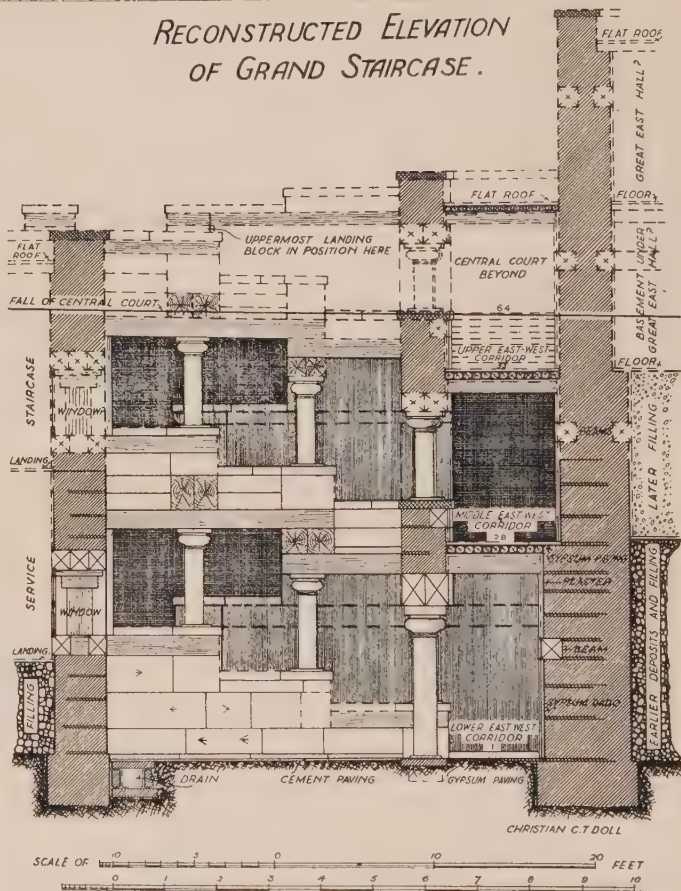
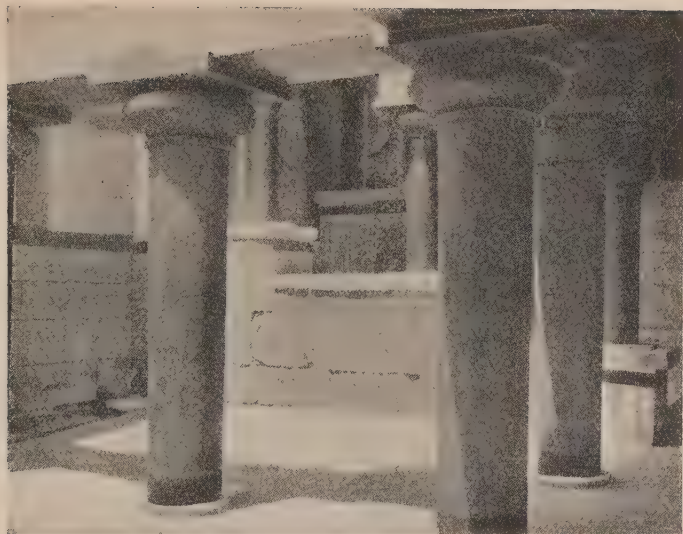


FIG. 247.

(Copied by permission from "The Palace of Minos.")



[B.S.A. An.

KNOSSOS : THE COLUMNED HALL AND STAIRCASE

CHAPTER IX

THE PALACE OF KNOSSOS : THE EASTERN WING

THE remains of the buildings on the east side of the central court are especially interesting inasmuch as they comprise the domestic and industrial, as distinguished from the ceremonial, quarters of the palace; and in their arrangement give evidence of a highly civilized social life and a culture more akin to our own than that of any other race of like antiquity. The rapid slope of the hill on this side necessitated its being terraced in three descending levels. But just south of the centre, part of the hill-side, as has been described (p. 34), was cut away vertically to the depth of 26 feet, bringing

it to the same general level as the second terrace. Buildings, in some cases of three or four storeys, were erected against the escarpment, covering the levelled site thus created and rising high enough to form a frontage to the central court. The division between the larger part of the cutting and the terraced slope on the north is marked by two long corridors one above the other which ran from east to west and gave access to the structures on north and south. The east end of the lower corridor was not open, but was filled up by a straight flight of steps which began on the lower part of the outer slope and led directly to the upper corridor, so that the palace was entered by this means on the upper floor.

On the northern or terraced part of this side the top of the slope may have been somewhat below the general level, and consequently required building up with a retaining wall and four heavy buttresses. Various indications show that these also served as part of the basement of a large hall, possibly the principal megaron of the palace, with a frontage on the central court.¹

In front of the buttresses, a passage which must have been only dimly lighted from the south end ran parallel to the retaining wall. It is called from the recesses between the buttresses the Corridor of the Bays (15). It emerged with a few steps downward at the south end on the upper east-to-west corridor which has been mentioned.

On the east side of the Corridor of the Bays a rectangular space, in several divisions marked by the remains of massive walls, evidently formed the rest of the basement of the megaron above referred to, and defined its extent.

¹ Bases of columns and coloured stucco fragments of a bull and human beings in high relief, together with a band of spiral ornament found in substructures, indicate that there had been an elaborately decorated room above. See Evans, p. 370, and "B.S.A.," vol. vii, pp. 87-90.

The central and largest division (16), contained two drain heads or gulleys which collected and carried off rain water from the roofs of surrounding buildings. The drain, after an angular course through and along adjoin-



[*Evans, P. of M.*

KNOSSOS: LOWER EAST-WEST CORRIDOR, LEADING TO THE HALL
OF COLONNADES

ing walls, emerged in a stone spout in the middle of the terrace-wall which ran north and south, and delivered the water into an open yard (17), whence it disappeared into a soak-well, the overflow of which may have been connected with the main drain of the domestic build-

ings.¹ Adjoining this yard on the south were several rooms built on the narrower part of the excavation in the hill-side, with which it was on a level. Some of them appear to have been used by workmen attached to the palace, one being evidently a lapidary's workshop.²



[Evans, *P. of M.*

KNOSSOS : COURT OF THE STONE SPOUT FROM THE NORTH
(The modern steps on the right show the line of an old stepway.)

¹ This part of the site was in Middle Minoan times occupied by a large room reached from the East-West corridor by a gallery parallel to the Corridor of the Bays. This was ultimately closed and converted into a magazine, the room also being subdivided by thick walls. The history of this part of the palace is so complicated that the reader must be referred to Sir A. Evans's minute and careful analysis of the dates of the existing remains, the completion of which has still to appear.

² See p. 77 below.

The buildings at the north-east corner of the great court appear to have been magazines and support the supposition that this quarter of the palace, at least in its lower regions, was assigned to industrial occupations, and work of various kinds. But the remains of a hall, known as the North-East Hall (18), with two column bases, and a small connected chamber lined with fine gypsum slabs, lying on the south of the magazines, must have been tenanted by an official of some importance. It was in a corridor skirting the east side of the hall that the remarkable playing-board, obviously intended for a game played with circular counters, was found. It was beautifully decorated with inlays of crystal ivory and gilt ornament, and it is probable that it was taken from the royal apartments and thrown aside after having been despoiled of its gold foil.¹

From an architectural point of view the most interesting remains of the palace are those in the central section of this eastern wing. Here are to be seen the well defined plan and parts of the walls of a royal hall or megaron of the type peculiar to Crete, with an external pillared portico open to both the east and south. In this section, too, are considerable remains of an upper floor still *in situ*, and now, by the aid of some restoration, easily accessible. For behind the megaron was a columnar hall, part of which was open to the sky, forming the approach to a grand staircase in short flights of shallow steps, which communicated with the upper floor, and with the central court still higher. By careful and laborious excavation from the level of the Corridor of the Bays, Sir A. Evans was able to restore to their original position four flights of steps corresponding to two floors, and found clear evidence that they did not end there, but were continued for at least another storey

¹ It is described and illustrated in colour by Sir A. Evans, "P. of M.," p. 472.

RM. OF THE PLASTER COUCH
COURT OF THE DISTAFFS
QUADRUPLE STAIRCASE
TREASURY
BATH-ROOM
CORR. OF THE ENLIGHTENED
DEPOSIT OF IVORY FIGURINES
HALL OF THE COLONNADES
QUEEN'S MEGARON
HALL OF THE DOUBLE AXED
LIGHT-WELL
LOWER EAST-WEST CORRIDOR
DEP. OF HIGH RELIEFS
BUILT DRAIN UNDER FLOOR
DRAIN

EAST

KNOSSOS: PLAN OF THE DOMESTIC QUARTER

which had a frontage and probably a doorway on the central court.¹ (See Elevation, p. 62.)

The megaron on the ground floor, which, from the roughly incised symbol which occurs many times on its back walls, has been named the Hall of the Double Axes, was about 53 feet long by 23 feet wide. At its eastern end it had four doorways, separated only by



[*B.S.A. An.*

KNOSSOS : LIGHT-WELL AND BACK WALL OF THE HALL OF THE
DOUBLE AXES

three narrow pillars or door jambs with responds on each side wall. They are now merely indicated by their

¹ "B.S.A.," vol. vii, pp. 35 *sq.* As this frontage was immediately on the south of the large megaron which is assumed to have been based on the Corridor of the Bays and adjacent substructures, it is uncertain where the principal door on the Court may have been. It also remains doubtful whether the uppermost flight of steps led to yet another storey or to a flat roof which overlooked the whole of the palace.

stone bases, the actual pillars having probably been of wood and rubble covered with plaster, having the lateral surfaces recessed so as to receive the wings of the double doors when fully open—a type of doorway which was common. These gave access to a fore-hall, the southern wall of which projected beyond the adjoining building, and was in like manner penetrated by three doorways. At the back of the fore-hall, another line of doors, corresponding exactly with those in front, led to the inner hall, which was crossed about 18 feet farther on by a low stylobate on which stood two columns of cypress wood, the carbonized remains of which were found. Beyond this stylobate was another space about 10 feet deep, which differed from the rest of the hall, inasmuch as its walls were composed of larger blocks of limestone, and its floor was paved with cement instead of squares of gypsum, which composed the floor of the inner hall. The evident reason for this was that this back space was open above to the air, and formed a well through the whole upper building for the admission of light—an arrangement which is characteristic of and peculiar to the *megara* of Crete.

Another distinctive fact is that neither in this case nor in others are there any signs of a hearth in the centre or elsewhere, though movable slabs of stucco have been found on which portable braziers may have been occasionally used.¹ The geniality of the climate is shown by the numerous openings in the fore-hall which connected it with a veranda or portico returned round the south-east angle. Its situation is shown by the bases of six cylindrical columns and a rectangular corner pier which appear on the plan: but Sir A. Evans has reason to suppose that the colonnade on the east may have formed one side of a small peristyle court.² The central part of the hall had a doorway on each side, that on the north opening into the lower east to west corridor,

¹ See Evans, p. 551.

Ibid., p. 329.

and that on the south into a narrow passage which led into more private apartments, and has been called from its angular plan the Dog's leg Corridor.

Behind the light-well and west wall of the megaron was the columnar hall already mentioned; the communication between the two was by the east to west corridor, which ran as far as the foot of the grand staircase. The hall was bisected by a row of three columns from north to south with an additional column between them and the newel at the foot of the stairs. The space surrounded by these four columns was another light-well open to the sky above and giving light and air to the hall and staircase without which they would have been in almost total darkness. The first flight ascended at right angles to the corridor and was divided from the hall only by a dwarf wall which formed a parapet graduated in three sections supporting the columns which upheld the upper stairs. The first flight consisted of twelve steps, which being only five inches in rise and eighteen deep formed an easy ascent to the half-way landing which had three steps at right angles to the main flights.¹ From here another flight, parallel to the first but ascending in the opposite direction, reached the first floor: these stairs were built close up to the retaining wall of the excavated hill and were lighted only by a borrowed light through an aperture in the rubble wall which separated the two flights. The first-floor landing thus reached was on a level and coincided with the upper East-West corridor from which the Corridor of the Bays could be entered through a doorway by three steps upwards. The side of the East-West corridor was here open and overlooked the light-well, being protected by a parapet on which stood a column supporting the work above. (See illustrations, pp. 62, 63.)

¹ The width of the steps was 6 ft. in the lower storey; above, it was reduced to 4 ft. 2 in., and the steps were a trifle higher.

The remains of a few more steps show that the flights were repeated in much the same form through the second storey, so reaching the level of the central court and forming, as it is called, a "quadruple staircase."

The eastern half of the columnar hall was covered, and from the fragments of the architrave it seems that its upper floor was a wide balcony which—like the gallery of the side corridor, with which it must have been connected—overlooked the open space of the light-well. There are indications that its walls were finely decorated with frescoes. It is needless to comment on the skill and fine architectural feeling with which this circumscribed space is turned to good account, with a result in which even the modern architect might find an inspiration.

At the east side of this upper loggia, but separated from it by a solid wall, was the light-well which served the Hall of the Double Axes, and no doubt a similar hall above it which would be entered from the East-West corridor.

The adjoining section of the palace on the south seems to have been planned with an especial view to privacy. It is therefore supposed that it was mainly assigned to the occupation of women, though there is no reason to assume that Cretan women of any class were kept in seclusion. All evidence that exists in the shape of frescoes and seals is entirely opposed to any such view.

The eastern front of this section is set back by about 33 feet, and the principal room which it comprises is a hall about 36 feet long by 18 broad, now designated the Queen's Megaron. Between it and the Hall of the Double Axes was an interval containing the crooked passage which connected them, and in the remainder of this space was a double stone staircase which gave access to the upper floors of both halls, and in fact formed, the only direct means of communication with them.

The Queen's Megaron had the usual light-well separated from the rest of the room by two columns, but in this case it was at the east end and there was no external portico giving a view over the country on that side. A few feet farther back the hall was divided by a row of rectangular supports mounted on a stone stylobate faced with gypsum, with a space for a passage at its northern intercolumniation. The stylobate was sufficiently wide to form on both sides a bench with a wooden seat coated with plaster and a raised back between the pillars. Beyond this comparatively narrow compartment was a larger one, obviously the principal section of the hall, which had a narrow light well on its south side separated by another pillared stylobate or seat similar to that just described (see plan, p. 68).

On comparing the two megara it will be seen that whilst their architectural features are similar their arrangements seem to reverse the importance of their corresponding divisions. In the larger one the section which adjoins the light-well at the rear, seems from its size and the character of its paving to have been the principal compartment, whilst in the other, with its reversed orientation, the square which corresponds to the fore-hall of the former appears to be the chief habitable portion. There are quite certain indications that the walls of both the light-wells in the Queen's Megaron were decorated with coloured frescoes, in one case representing in very naturalistic style fish swimming in the sea, and in the other (on the south side) a bird with brilliant plumage partly in relief, which may have been intended to compensate for the absence of an external outlook. That the inner walls of the megara were also, like many of the corridors, enlivened with frescoes seems certain from fragments found near them.¹

A door in the south side of the Queen's Megaron

¹ Evans, p. 543, and "B.S.A.," vol. viii, p. 58.

communicated with two side rooms, through which a devious access could be had to the terrace and veranda outside the larger hall.

At the back of the Queen's Megaron were two doorways side by side, one of which, on the right, led into a small and dark chamber, used as a bathroom, whilst the other opened on a corridor leading to a room at the western end of this section. In its south-west corner is a rectangular platform of plaster, apparently meant to support a bed, whence it has been named the Room of the Plaster Couch. The passage took a turn to the right just before the door of this room, and across this short return was a closet partitioned off by gypsum slabs and entered from the room. In it were indications of a wooden seat above a shaft communicating with well-constructed drains below and an aperture in the floor by which they could be flushed with water. The sanitary system here illustrated, in regard to efficiency, falls little short of modern requirements, and is unapproached by anything of the kind in mediaeval times.¹

The room with the couch had two other doors, one of which, on the north side, led into a small open court lined with stone, lying close to the vertical side of the hill, by which the room was lighted through a window in the north wall. This light-well has been named the "Court of the Distaffs," from the symbols inscribed on its walls, which support the idea that this part of the palace was allotted to women. The other door, which was on the farther side of the closet, led into a crooked corridor which was lighted from the same court and communicated with the Hall of the Colonnades at the back of the larger megaron.

In communication with the same corridor was a rectangular walled space, which seems to have formed

¹ It is described and illustrated with plans in Evans's "Palace of Minos," pp. 225 *sq.*

the casing of two flights of wooden stairs, which have now disappeared, but which must have been the means of access to the back of the upper storey. This upper floor followed the main lines of the ground-floor plan with two large rooms on the east entered by doors at the top of the stone staircase mentioned on p. 72, and lighted, of course, by the same "wells" as the rooms beneath. At the back a corridor corresponding with that below led past the head of the wooden staircase to the upper gallery of the Hall of the Colonnade. Another corridor also answering to one on the ground floor led to the rearmost chamber over the room of the Plaster Couch. Here, also, against the west retaining wall was a stone slab, from which the room has been named that of the Stone Bench. It had a latrine in a small recess at the south-west corner above a shaft which joined a branch of the drain mentioned before.

The remaining buildings on the south of this domestic section of the palace had their basements and ground floors on levels corresponding with the terraces of the northern portion of the hill-side. From the upper terrace a short and narrow flight of steps led upward to the central court. Here the original substructures, in which were found some ceramic relics of the earlier palace, had evidently been filled up when it was reconstructed. Further south, beyond the southern line of the central court, is a quarter which appears to have been little altered since Middle Minoan times. In it were found two small cells of a religious character; one which appeared to be an oratory containing an interesting collection of sacred symbols and images, and another with one of those tank-like cavities in the floor which have been noted in the western wing of the palace.¹ Alongside of these was an oblong open court (22), containing the base of an altar. It seems evident that this

¹ "B.S.A.," vol. viii, pp. 93 *sq.*

section was devoted to religious observances; and since it appears to have suffered less than the rest from the fire which partially destroyed the earlier palace, it was probably reoccupied sooner after the final catastrophe. Hence it may be inferred that the ancient cult of the days of Minoan prosperity survived and was practised in its old forms until the latest period of reoccupation.¹

On the east side of this "Court of the Sanctuary," as it is called, the ground falls away, and a flight of steps formerly led to another walled space called the South-East Court. Alongside of it are the remains of a rectangular building divided into several rooms and passages, and having a tower-like structure with very massive foundations at its south-east angle. The pottery found in the lowest stratum connects it with the Middle Minoan period. This is also the case with the foundations of some buildings on the east side of the last-named court, for whilst the walls were constructed mostly of rubble the doorposts were of squared limestone instead of the wood and plaster jambs which are usual in work of the Later Minoan period.²

Immediately to the south of this and at a still lower level are the remains of a detached dwelling evidently later in date (23). Like the domestic quarter of the principal palace it was built against an escarpment of the hill-side, so that it would be entered from the higher level, the ground floor being reached by a descending staircase in two flights. Here was found the floor of a colonnaded megaron in which three columns were placed round two sides of a light-well, as in the hall of the quadruple staircase. Besides other rooms and corridors there was a small unlighted chamber about 10 by 6½ feet in area, containing in the centre a quadrangular pillar similar to those in the basement of the west wing of the palace.

The upper floor and entrance of the house were on the

¹ "B.S.A.," vol. viii, p. 105.

² *Ibid.*, pp. 106-7.

same level as the lower terrace, which extended along the whole eastern frontage of the palace, marked by a double retaining wall of masonry running from south to north. Within and parallel to this line, where it passes in front of the Hall of the Double Axes, are the footings of what seems to have been a corridor which is probably connected with an eastern entrance to the palace. This may explain the curious discovery of broken fragments of a large stucco panel, on which was delineated what may be regarded as the representation of a "labyrinth."¹ On the assumption that this word, which is not of Greek derivation, meant originally "the place of the *labrys* or double axe," it seems probable that it may, in Late Minoan times, have already acquired its secondary and classical significance of a complicated and maze-like building and have been thus pictographically represented at one of the entrances.

The remains of the double terrace wall are interrupted in front of what are assumed to have been the workshops,² where the actual entrance portal may have been, though all indications of it are wanting. A few yards further north there are considerable remains of a projecting bastion, beyond which the line of wall, set back by a few feet, reappears. Here the construction is very massive, for in Late Minoan times an additional facing of two walls—the inner of rough blocks and the outer of ashlar—was set in front of the original double wall. In the north angle formed by the projecting bastion an interesting feature is found at the foot of the wall, namely, a stone platform about 23 feet long, which was reached by a short stairway from the terrace above. Down the side of the steps, and along the centre of the platform, was a water channel which was connected with a square basin or tank in the platform (24).

¹ "B.S.A.," vol. viii, p. 104, and Evans, p. 357.

² See *ante*, p. 66.

It seems possible that this water duct was connected by a drain about 27 yards long with the overflow from the Court of the Stone Spout¹ which lay immediately above it. Near the north end of the platform, which was slightly stepped to correspond with the slope of the channel, the overflow from the tank turned eastward, and was discharged into a larger tank below which was accessible by another short set of steps at the south end. The sloping ducts were ingeniously formed with transverse ridges or offsets, apparently with the object of intercepting sediment.²

In this summary of the chief architectural features of the palace so far as they have been recovered, there has been no occasion to enlarge upon many decorative details and objects of art which have been brought to light during the excavations. They are admirably described, illustrated, and discussed in the discoverer's comprehensive work on the subject,³ and show the high degree of civilization and social order attained by its inmates no less distinctly than the remains of their architecture testify to their ability and independent genius in that special form of art.

¹ See *ante*, p. 66.

² See "B.S.A.," vol. viii, p. 114.

³ "The Palace of Minos," by Sir Arthur Evans.



[B.S.A. An.

KNOSSOS : THE THEATRAL AREA

CHAPTER X

THE THEATRAL AREA

THERE still remains to be mentioned an outlying feature of the palace which, from an architectural point of view, rivals in importance even the quadruple staircase; and which, in the absence of any example elsewhere, must be regarded as evidence of originality on the part of the Cretan builder.

Near the north-west corner of the palace behind the foundations of a long building which occupied part of the western court or open space on the north, there is a paved area bounded on the east and south by wide flights of low and broad limestone steps. The angle in which the lower steps of the two flights intersect is partly covered by a raised square platform, level with the

uppermost step on each side. At the top of the southern or lateral flight were the footings of a low parapet with an interval in the middle which gave access to a paved causeway between the palace wall and the long building above mentioned which extended eventually to the south-west portico. It might be supposed that these imposing stepped ascents formed part of a stately entrance to the palace precincts. That they did in fact form an approach is shown by a slightly raised footway leading from the scanty remains of a pillared gateway at the west end of the paved area to the opposite flight of steps, and extending beyond it to the northern entrance of the central court mentioned in chapter viii (p. 58). But the absence of a frontage or propylaeum at the top of either flight, which would constitute a grand entrance, is unfavourable to the view that these steps were originally designed for architectural effect and leads to the conclusion that they were intended for the accommodation of spectators at athletic displays or possibly religious functions in the paved space below, which has consequently been described as "the Theatral Area."

That the Cretans had a remarkable mimetic and dramatic talent is obvious from the curious scenes depicted on some of the seals and by the grotesque semi-human monsters on others. Processions or religious scenes found in the decoration of walls or in smaller works of art also show a propensity for ceremonial or ritual observances; and on similar evidence it is equally obvious that contests of strength and dexterity were a favoured feature in Minoan life.¹ Vases, seal impressions, or

¹ The "Corridor of the Procession" at Knossos (see p. 59), of which the fine figure of the cupbearer probably formed a part, must have afforded a remarkable instance of this kind. Another is the well-known "Harvesters" procession on part of a steatite vase formerly covered with gold leaf which was found at Hagia Triada. See *post*, p. 112.

frescoes show figures engaged in boxing and wrestling and—more characteristic than all—in a peculiar sport which has been termed bull-grappling. From various representations it is evident that both men and women took part in a kind of bull fight in which, at the risk of life and limb, they seized the animal by its horns and tried to mount and master it. It may reasonably be supposed that the employment of slaves or captives in this dangerous sport was the foundation of the Athenian legend of the Minotaur.¹ The frequent occurrence of the bull or bull's head in art, and the fact that a pair of horns, sometimes with the double axe between them, had some symbolic significance, suggests that these contests were something more than simply secular or spectacular entertainments.

That this particular performance took place in the confined area just described is hardly possible, but it is difficult to avoid the conclusion that the space was designed for public spectacles. The steps overlooking the court may thus be regarded as an early equivalent of the Greek theatre and the Roman amphitheatre.²

¹ Sir A. Evans speaks of "the bull-grappling scenes, of which the Thessalian *Ταυροκαθάψια* may be regarded as a kindred survival" ("B.S.A.," vol. viii, p. 74). They throw a sidelight on practices which still characterize some branches of "the Mediterranean race."

² As the earliest Greek theatres were temporary structures of wood, it would be going too far to suggest a process of development here: but it may be noted that when in Greece permanent theatres were built of stone, the place for the spectators was always constructed on a site that naturally gave the required slope as is the case both here and at Phaestos.

CHAPTER XI

THE LITTLE PALACE AND ROYAL VILLA

A ROAD leading west from the Theatral Area proved, when it was completely excavated, to be a paved street leading, at a distance of 300 yards, to the remains of a building of considerable importance. From its size, plan, and character it has been called The Little Palace, and it appears to have been built at about the same time as the later palace at Phaestos and to be contemporary with the smaller one at Hagia Triada; that is, in the early part of the Late Minoan period, *c.* 1600.¹

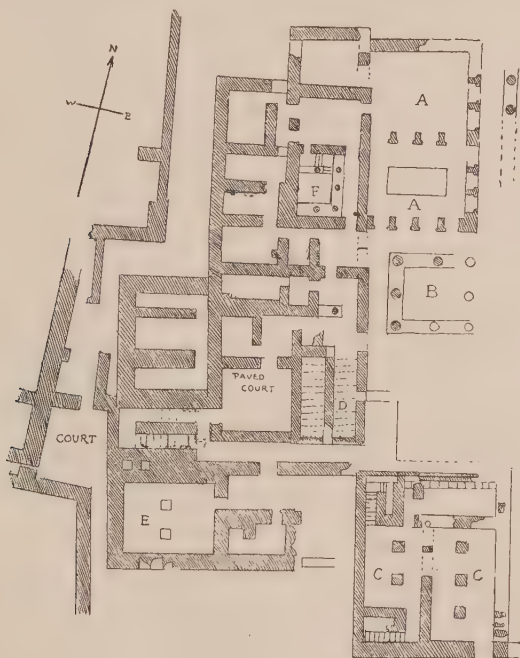
It was not built, like the larger palaces, round a central court, but had the character of a large private dwelling covering an area about 140 feet from north to south and 95 feet from east to west.

Though the entrance is not clearly indicated, it was probably at the south end, and the principal rooms were at the east side. Here, at the north end, was a large megaron (AA) of two compartments, divided by the usual row of narrow pillars or door jambs, and opening by similar doors on the east on to an external columned portico. At its south end, in place of the usual light well, was a small peristyle court (B) open in the centre and surrounded by a covered portico with eight columns. Similar cloister-like courts will be found at Phaestos and Hagia Triada.

Farther south lay some other chambers (CC), including a

¹ For detailed description and illustrations see Sir A. Evans's account in "B.S.A.," vol. xi, pp. 5 *sq.*, and "Archaeologia," vol. lxxv, pp. 59 *sq.*

light-well, of which only the basements remain. These included two rooms or cellars, in which were rectangular pillars which may have supported columns in an upper storey, but which almost certainly had a religious



PLAN OF THE LITTLE PALACE. ("Archaeologia.")

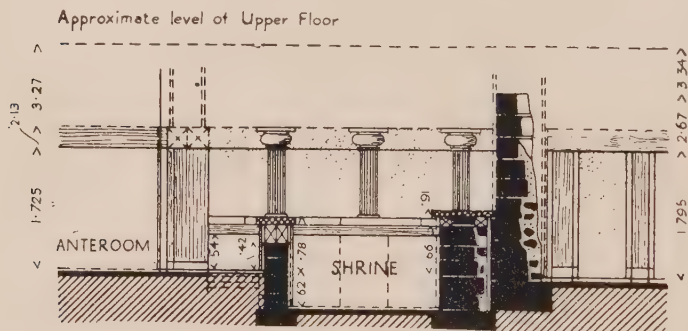
character. At the south end are the remains of a small double staircase which led to this upper floor.

There is another staircase on the west side of the building, but the principal one was a larger double flight (D), accessible from the peristyle court.

At the south-west corner of the site is another base-

ment-room (E), with two more pillars, the character of which is confirmed by a deposit of ritual vessels, and a pyramidal stone base in which—as is evident by specimens found elsewhere—the shaft of a symbolic double axe was inserted.

It seems that the whole building was largely devoted to religious cult. Further evidence of this is found in a sunken area (F), approached through an anteroom on the north side of it, which was in close communication with the megaron. The cavity, the floor of which measures



LITTLE PALACE : SECTION OF THE SHRINE, LOOKING EAST
(“Archaeologia.”)

7 by 6 feet, is about 2 feet deep, and was bounded on three sides by a gypsum parapet on which stood five wooden columns. The floor was approached by a short stairway of six steps, which were returned round the column on the north parapet. From the objects found in it there is no doubt that, like the similar areas found in the larger palaces, it was a shrine or place of purification. This is corroborated by the fact that when the site was partially reoccupied after the sack of Knossos, the same spot, in an altered and degraded form, was used for the same purpose, as was evident from the

rude, fetish-like objects found within it.¹ But its most interesting significance, architecturally, is that one form of the wooden columns used here, and probably elsewhere, at this period is directly illustrated. When the ruins of the building were reoccupied after the general catastrophe, this open shrine was converted into a closed cell by filling up the intervals between the columns with a solid wall of rubble and clay. The result is that though the columns themselves have perished, the impression of their embedded portions remains on the plaster, and shows that the shafts consisted of cylinders with fifteen convex flutings, an idea which was probably derived from the reeded Egyptian columns which were frequently used in the XVIIIth dynasty. There are unfortunately no indications of the form of the capitals.



KNOSSOS: SECTION OF
THE IMPRESSED COLUMN
("Archaeologia.")

THE ROYAL VILLA²

About 130 yards east of the north entrance of the great palace are the remains of a building which also has a special architectural interest. It lies considerably below the general ground level, being built like the south-eastern house mentioned above,³ partly under and within the declivity which forms the west bank of the river. It is probable that, as in that case and in the domestic quarter of the palace, the usual entrance was from the higher ground, and in connexion with the staircase which is found within it. From the mode in which this was designed it is evident that an architectural effect

¹ "Archaeologia," vol. lxxv, p. 63.

² See "B.S.A.," vol. ix, pp. 130 sq.

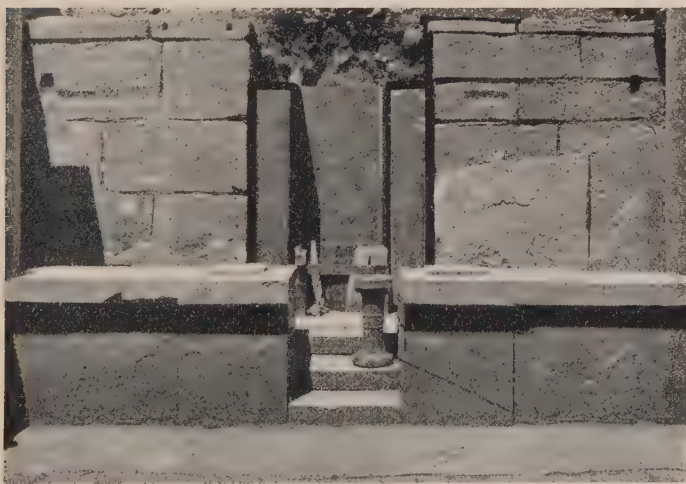
³ *Ante*, p. 76.

was intended. For from a corridor on the ground floor a single flight of ten shallow steps led up southwards to a half-way landing. This was apparently lighted by a large window in the south wall, and from here two flights, to the right and left of the lower flight, ascend in the reverse direction and emerge on a corridor above that on the ground floor. The fact that the left-hand or western flight is built over the rock outside the limit of the ground-plan suggests that it was purposely designed to give symmetry and add dignity to the staircase. Though no walls above the first floor remain there are indications that the same arrangement was repeated up to a third storey, where Sir A. Evans is inclined to place the entrance from the higher level (see plan, p. 89).

The most remarkable feature in the house is a hall which occupied the centre of the ground floor with its axis lying east and west. It was entered from a corridor on the south side. Across the whole of its western end, was a narrow platform or dais about 14 feet in length, with a parapet 2 feet 8 inches high along the front, except in the centre, where three steps ascended from the floor of the hall. The parapet had a flat projecting coping on the ends of which, at the steps, were shallow square bases as if to support two wooden columns. In the centre of the back wall there is a rectangular recess just large enough to contain a seat of gypsum, of which some fragmentary remains were found. It is possible that this had a canopy, supported in front by the wooden columns which stood on the parapet. Apart from the fact that this western termination was rectangular the arrangement corresponds closely with the tribune and apsidal exedra of the classical basilica, and even recalls the cathedra and cancelli of the Christian church.

The central space of this hall was nearly square, its limit on the east being indicated by two narrow piers with their responds on the side walls, between which

were three doorways. The double doors, like those in the megara elsewhere, must, when open, have fitted into the jambs so as to leave an unimpeded passage. Farther to the east there was another division marked by a stylobate on which stood two columns, beyond which there was a cement-floored area which was no doubt a light-well open to the sky. The total length of



[B.S.A. An.

ROYAL VILLA: WEST END OF THE BASILICAN HALL OR MEGARON

the hall, excluding the recess at the west end, was about 39 feet.

On the north side of the central space a doorway led into a chamber about 13 feet square, in the centre of which stood a rectangular pillar similar to those mentioned elsewhere. That it served any structural purpose seems open to doubt, for it is evident from apertures at the top of the walls that the floor above had

been supported by a massive wooden beam 2 feet 8 inches in width above and across which were cylindrical rafters nearly 18 inches in diameter. Timber of this size would be sufficiently strong to support a stone floor for a small room above without a central pier. The absence of any means of lighting it supports the idea that this pillar-room had a religious character. A door in the west wall gave access to a narrow staircase leading to the upper storey which probably extended over the basilica-like room.

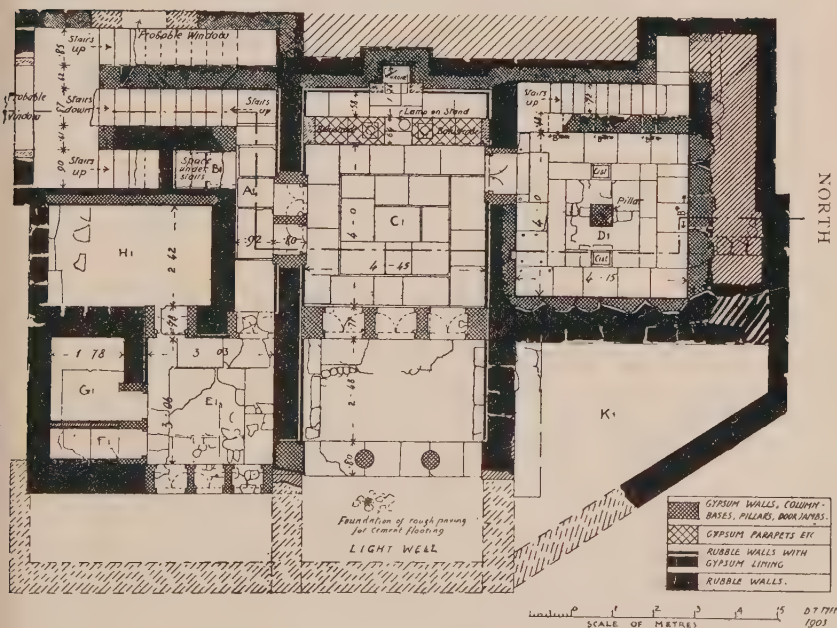
The walls of the pillar-room were carefully constructed of gypsum blocks faced with cement, and the same construction was used for the back of the platform in the large hall, and for portions of the main staircase. In other parts of the building the walls consisted of rubble or limestone; but in many places were lined with slabs of gypsum and show traces of colour. The careful construction of the whole, as well as its character and situation, indicate that it was designed as a royal villa in close connexion with the palace: and evidence of luxurious appointments was found in some fine pieces of painted ceramic ware assignable to the culminating period of the latest Cretan civilization. On one of these vases a decoration of lotus-flowers illustrates the manner in which Egyptian motives were assimilated and adapted by the Minoan artist. To the student of architecture the chief interest of the building lies in the evidence which it furnishes of an early type of the classic basilica, and the fact that here, as in the domestic quarter of the palace, earlier than elsewhere, the connexion between the upper and lower storeys of a secular dwelling can be actually seen and studied. That the Cretans, like the Egyptians, must have been accustomed to live in houses of several storeys for some centuries before this period is obvious from representations of them which will be referred to in a later chapter, but the only existing domestic building

comparable with this is the pavilion of Rameses III at Medinet Habu, near Thebes, which, however, is probably 250 years later.

This chapter concludes a necessarily incomplete survey of the chief architectural features of Knossos, but some further details of considerable interest occur in the scarcely less important buildings which lay near the southern coast of the island.

WEST BANK

NORTH



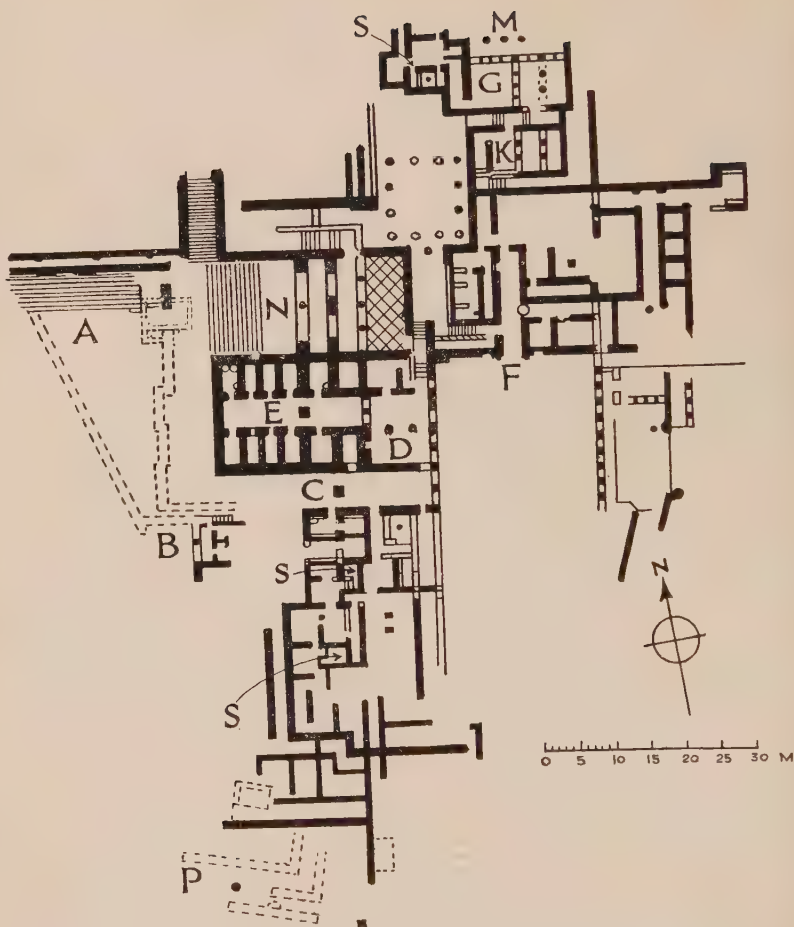
GROUND PLAN OF THE ROYAL VILLA

[B.S.A. An.

A. Corridor.
B. Right-hand staircase.
C. Megaron.

D. Pillar room.
E. Open Hall.
F. Closet.

G. Side room.
H. " "
K. Demolition.



- A. Theatral area of the Early Palace.
- B. Entrance Porch of the Early Palace.
- C. Later entrance.
- D. Men's Megaron.
- E. Corridor of Magazines.
- F. North entrance from Court.
- G. } Megara in private apartments.
- K. }

- M. Open portico.
- N. Propylaeum, or State entrance of Later Palace.
- P. South-east Porch of Early Palace.
- S. Shrines or Sanctuaries.

PLAN OF PHAESTOS



PHAESTOS : STEPPED APPROACH TO THE STATE ENTRANCE
(Noack, "Homerische Paläste.")

CHAPTER XII

PHAESTOS

THE ancient town of Phaestos lay to the south-west of Knossos, from which it is separated by 27 miles of mountainous country. The site looks on the east towards the great plain of Mesará—the most fertile district of Crete—but another range of hills, on a short spur of which the town was built, intervenes between it and the southern sea. It is nearer to the shore on the west, where the coast takes a sharp turn northward. It was near enough to Knossos to have had some dependant relation towards it, but sufficiently isolated by the range of Mount Ida on the north to allow of the supposition that it was the centre of a subordinate government.

The highest point of the spur was the acropolis of the former town; but the palace lay at the lower eastern end and its view towards the sea was therefore cut off. It is possible that it was the site of a chieftain's dwelling in Early Minoan times, but all traces of any such building have disappeared and the remains of pottery of that period are scanty.

From the excavations conducted by the Italians under Professor Halbherr and Dr. Pernier,¹ it is evident that a palace was built in the Middle Minoan period at about the same time as that at Knossos, and though on a smaller scale it was not unlike it in its main features. It may have had, however, a longer existence, for the second palace, to which the greater part of the existing remains belong, must have been built a century or more later than the second palace at Knossos. It is possible that its destruction was more complete, for the Late Minoan builders, to a large extent, discarded the remnants of the old building and buried them under concrete upon which they laid their new foundations.

As at Knossos, the plan includes an open level space on the west, in addition to the central court which was surrounded, on three sides at least, by columned halls, corridors, and store-chambers; but owing to their smaller extent and partly also to the obliteration of the original substructures, the plan of the whole is less intricate. There is nothing corresponding in depth to the excavation on the eastern declivity at Knossos, nor any such expanse of walled terraces, but the inequalities of the site, to some extent due to want of uniformity in filling up the old foundations, have led to the palace being built on different levels which have been connected by stepped passages with much ingenuity.

There are, at present, four different ground levels

¹ See "*Mon. Ant.*," vols. xii, xiv. The excavation was begun in June 1900.



PHAESTOS : THEATRICAL AREA FROM THE SOUTH-WEST
(Mosso's "Palaces of Crete.")

The earlier west frontage is seen on the right.

exposed, but the lowest is due to the uncovering of parts of the earlier building. That the western court was a part of this, is evident from the fact that it was covered by a stratum of concrete more than four feet thick, on the removal of which appeared not only an older pavement, but also the original foundations of the western wall some yards in advance of the later frontage. The older wall, like that at Knossos, had a projecting podium, or bench, consisting of large blocks of limestone about 3 feet thick, which had been coated with red plaster. The wall resembled that at Knossos also in being broken or set back in shallow returns at irregular intervals.

Facing this court, at its north end, is a wide flight of steps somewhat higher in rise than ordinary stairs (A on plan), at the top of which there is a plain wall or barrier. The court below is traversed diagonally by a slightly raised stone causeway leading from a side-door in the palace to these steps, up which it is continued by a line of superimposed treads forming a more convenient stairway. The conclusion is unavoidable that this graduated platform was used as a *theatrum*, or place for spectators, at any rate during the existence of the earlier palace, and corroborates the significance assigned to the corresponding area at Knossos.

There is also a wide flight of steps at the east side of the court, but these are obviously part of the later palace (of the L.M.i. period) and formed the approach to a grand entrance.

The diagonal causeway across the court led to a break in the original western frontage, where it turned eastward to a gateway with a central column in its front similar to the south-west entrance at Knossos (B).¹ This was evidently an entrance to the older palace, and when the general level was raised by the layer of concrete

¹ There is a detailed comparison of the two in Noack, "O. und P.," p. 6, also in Evans, p. 214.

which covered the old foundations north of this point, another entrance was made leading directly to the central court on the north side of the old one. This consists of a passage 17 feet wide paved with gypsum, at the centre of which two steps and the base of a column indicate the position of a gateway of which nothing else remains (c).¹

The north side of this passage was the side wall of a rectangular building, about 60 feet in length, constructed of massive and well-squared blocks of limestone. The eastern end of this building contained a hall (D), the axis of which lay north and south, the east side of which consisted of a partly closed portico, with doors opening on to the central court. The hall was divided transversely by two columns. It has been called the Men's Megaron, but it was evidently not a private apartment. In its west wall a double doorway led into an East-West corridor (E), on each side of which were narrow chambers somewhat like the western magazines at Knossos, and no doubt serving, like them, for storage or for the safe keeping of property. In the centre of this corridor stands a rectangular pillar, and as the walls of the magazines which are in alinement with it are much thicker than the rest, it may be assumed that they mark the line of a transverse row of columns on a large upper hall.

The buildings on the south side of the entrance passage and gateway consisted of an irregular assemblage of rooms and passages of less solid construction, some of which were probably devoted to the domestic service of the palace. But they included two of the small tank-like areas (ss) which are supposed to have been shrines or sanctuaries, one of which appears to have been lined with wood.² Two other rooms had stone benches against

¹ As to the paving, which was of stucco coloured red, see "Mon. Ant.," vol. xii, 40.

² *Ibid.*, p. 45.

their walls, in one of which the front was ornamented with so-called "triglyphs," *i.e.*, with incised bands made by two deep lines with a thinner line on each side. These were carved on separate slabs set alternately horizontally and vertically, and have some faint resemblance to a doric frieze.¹ At the extreme south end, where the ground begins to slope rapidly, the footings of another porch (P), of the same type as that at (B), were found below the level of the later walls. It was evidently part of the early palace buildings.

The so-called Men's Megaron in the northern block was separated from the central court only by a stylobate in the middle of which is an elliptical column-base with two quadrangular bases on each side of it. The two central intercolumniations opened on the court through doors, as was evident from a bronze shoe of one of the pivot hinges which was found *in situ*. The other spaces were probably filled in. The central column was in a line with the two internal columns which divided the hall transversely. The explanation of the elliptical base may be that the column was intended from the front to equal in diameter the quadrangular pillars, and from the side the two internal columns.²

There are bases of a central pillar and lateral pilasters at the opening through which the western entrance-passage emerges into the court, and, in fact, there are indications that this western side had a continuous series of alternate columns and pillars which, in the southern

¹ They are not so similar as to suggest any actual relationship, but the resemblance is not so far-fetched as in the case of the bisected rosette ornament to which the term triglyph is often applied.

² Dr. Pernier, however, says that the base may have supported a quadrangular shaft, which is more consistent with the fact that it was the centre post of a double doorway. See "Mon. Ant.," vol. xiv, 360. The column-base in front of the State entrance or propylaeum (p. 100 below) is also slightly elliptical (Evans, p. 213 *n.*).

half, where the actual wall is set back, would form an open portico. Thus, notwithstanding the various openings and the uneven frontage, the west side of the court formed a satisfactory architectural balance to the opposite side, which seems to have consisted of a long covered walk with alternate pillars and columns 5 feet apart. In the northernmost bay the intermediate column is omitted, and here under the portico are two cement-lined troughs, about 4 ft. 3 in. long and 2 ft. 4 in. wide, somewhat suggestive of the lavatory in a mediaeval cloister. Against their south ends is a bench of gypsum facing down the corridor.

At the north end of the court was an imposing doorway (F) through which a corridor led to the private apartments. It is about $9\frac{1}{2}$ feet wide and was flanked by a semi-column in stone and a deep niche 3 feet wide on each side. The back wall of each niche had coloured frescoes.

The area of the great court was about 153 by 72 feet, not including the portico on the east, which was about 6 feet wide. At the south end, which was on the brow of a steep incline, there are no remains of buildings. It is paved with large blocks of stone covered with cement, but the stone paving does not come close up to the west frontage, but finishes in a straight line about 7 feet from it, the intervening strip being paved with cement covered with stucco. The strip extends some 16 feet beyond the southern limit,¹ which seems to imply some change of plan.

The corridor which ran northward from the central court led, on the same level, to what were apparently the domestic and women's apartments. At the extreme north end of the palace are two megara (G, K), which correspond in relative position to the Hall of the Double Axes and the Queen's Megaron at Knossos. The larger

¹ See "Mon. Ant.," vol. xiv, 361.

of the two was entered from the south side through a narrow fore-hall, on the left of which was the principal apartment, and on the right a light-well. These sections were separated by rectangular door jambs and columns on a stylobate as at Knossos; but on the north side both fore-hall and living-room communicated with an open portico or columned loggia (M), which gave a view towards the north. At the west end was an opening which led by a crooked passage into a chamber containing one of the tank-like shrines in the floor.

The smaller megaron, which may be presumed to have been used by women, was at a slightly higher level. It was separated from the other by a passage about 6 feet wide, in which three steps led up to the entrance to its inner compartment. Beyond this point six more steps ascended westward to a square landing on the farther side of which a solid wall of masonry stopped further progress. The wall on the south side of the passage was for part of its length represented by a low parapet with a column next to the entrance to the megaron, so that the staircase was only partially shut off from it.¹ The floor of the hall was crossed by two low stylobates, separating the usual three divisions, upon each of which are the circular bases of two columns with rectangular responds on the walls. In the space at the west end, which was somewhat larger than the others, a bench of gypsum runs along the south and west walls. At the back of the latter is a narrow passage, entered by a door in the wall, with a staircase at the south end which

¹ A possible explanation of this stopped staircase is that this portion of the palace is part of the earlier building, and that when the peristyle court (see p. 103) was constructed on the higher ground to the west the stairway was cut short by the retaining wall which was rendered necessary. The passage being thus made useless may have been partially thrown into the megaron by dwarfing the intervening wall. There is no doubt that the megaron had undergone some reconstruction.

turned round the angle and probably led to a similar chamber in the floor above.¹ The general architectural features correspond with those at Knossos, though they are probably later in date, for here the pavements and the walls and benches of gypsum have an appearance of newness which suggests that they were of recent construction when the palace was involved in the general ruin.²



PHAESTOS : STOPPED STAIRCASE BETWEEN THE MEGARA
(Mosso.)

THE STATE ENTRANCE. The portions of the palace which have so far been described lay on the general level which was obtained by covering up the old foundations and the western court. To some extent it is probable that the old building lines were followed, particularly in the limits of the central court and its northern exit.³ But on the north of the quadrangular block which

¹ "Mon. Ant.," vol. xiv, 392.

² *Ibid.*, vol. xii, 66.

³ See Noack, "O. and P.," p. 15.

contained the Men's Megaron and the magazines a different plan was adopted. Here the earlier buildings were not reduced, and probably were not easily capable of reduction to the new level, and a quadrangular platform about 6 feet above this new level was formed. No doubt this rise in the floor had existed from the beginning and results from the conformation of the ground which rises throughout the north-west quarter of the site. To this elevation is due the fine flight of twelve steps, 45 feet in width, which formed the approach to a large propylaeum or entrance portico (N). This building combined the characteristic parts of both a megaron and a portal, and must have been the most imposing external feature of the palace. As in other entrances, both here and at Knossos, its roof, whatever its form may have been, was supported in front by a central column, before which was an open platform, very slightly sloped forward, to carry off rain.¹ The passage-way on either side of the column was considerably narrowed by heavy rectangular pilasters or responds projecting from the side walls. Behind this porch lay a very shallow vestibule, in the back wall of which were two doorways nearly 8 feet wide. The space beyond, corresponding in position to the inner hall of a megaron, but barely 10 feet deep, was separated by a stylobate and three columns from a larger space about 19 feet deep which, from its cement paving, instead of gypsum, had evidently been an open court or light-well. The structure had thus all the component parts of a Cretan megaron, but the exiguous dimensions of the covered portion are evidently inconsistent with its use for domestic habitation, and it is now generally agreed that the whole building formed a grand entrance which gave access to the interior of the palace by doors in the north side-wall and in the back wall of the open court at the rear. The provision of a light-well of unusually large size in a building which must have been fairly well

¹ "Mon. Ant.," vol. xii, 71.

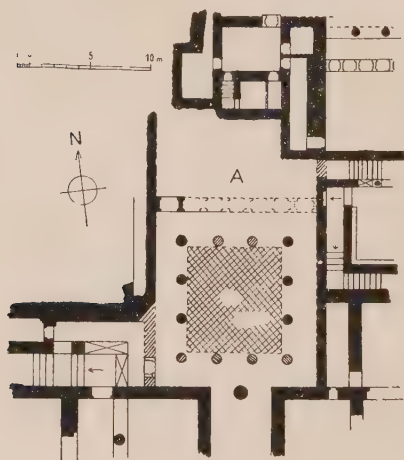
lighted from the front remains somewhat puzzling. Noack's suggestion that it contributed to the magnificence of the entrance by frescoes on the walls and other additional decorations on ceremonial occasions may be a possible explanation.¹

The position of this state entrance was the more convenient inasmuch as it facilitated access to both the higher and lower portions of the residential quarter of the palace. The door at the back of the light-well opened on a landing from which stairs on the right led downward to the Men's Megaron, and upwards on the left to a broad corridor, at the farther end of which was a rectangular portico or peristyle court. Another door on the north side of the hall gave immediate access to a short flight of steps ascending westward to an open terrace on the same level as the peristyle court, with which it communicated directly by a long passage parallel to the stairs. From the terrace there was an extensive view to the south-west across the western court and the theatral steps of which, however, only the upper four remained uncovered after the remodelling of the site and building. This was the highest level of the ground floor of the later palace; but there was still higher ground on the north-west with buildings on it which were reached by an external flight of steps which started close to, and at right angles with, the lowest step of the state entrance.²

¹ Noack, "O. and P.," p. 13. He compares the frescoes on the walls of the light-wells at Knossos (see *ante*, pp. 72 and 73, and "B.S.A.," vol. viii, pp. 51 *sq.*). From the occurrence of light-wells in places where there seems no particular necessity for them, as here and in the megaron at the north end (*ante*, p. 98), it may be supposed that they had become customary adjuncts to a large room or hall and may have been used as indoor gardens or conservatories for plants which require shade and moisture rather than sun.

² In Middle Minoan times there was probably a public court or agora at this higher level. It appears to have been terraced up by a retaining wall of that period at the top of the theatral steps, and

It may be inferred from the plan of the central court, with its eastern and western ranges of columns or pilasters and the two semi-columns (which are exceptionally of stone) at the north doorway, that in the interval—perhaps 100 years—between the reconstruction of Knossos and the rebuilding of Phaestos, the decorative use of columns had been considerably developed, and the architectural effect of symmetry and ordered repetition



PHAESTOS: PERISTYLE COURT
(Noack.)

had begun to be appreciated. This may have been one of the lessons learnt from Egypt, where even in the XIIth dynasty ranges of columns were used for architectural effect; but if such were the case, the lesson was applied in the original and independent manner which characterizes all Cretan art. This is illustrated in the plan of the peristyle court, which is the most original feature

in this uppermost level of the palace buildings.¹ The broad corridor, which was its main approach on the south, could also be reached from the central court by

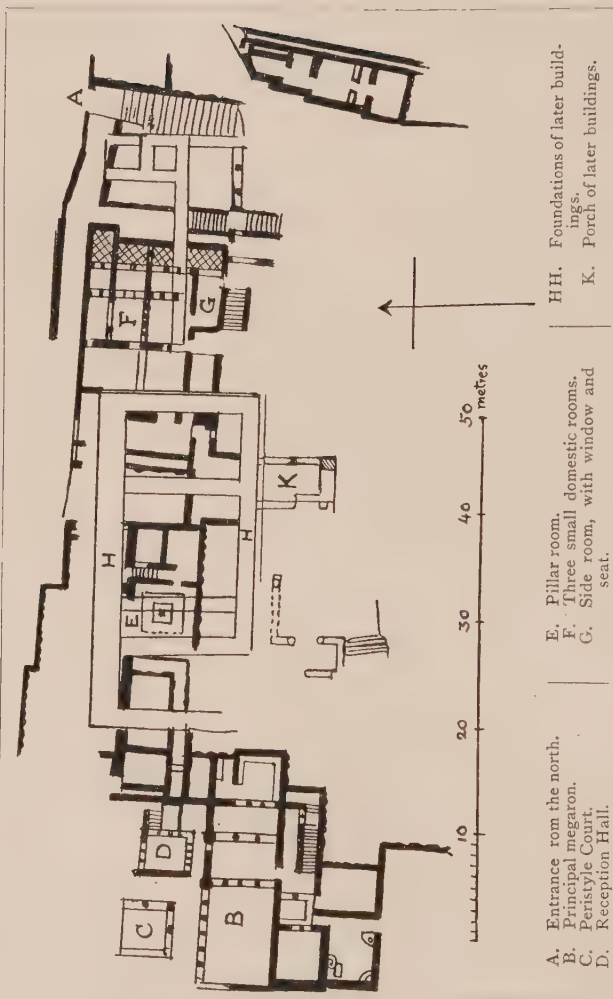
there are remains of a paved causeway on its eastern side similar to that in the court below. But the existing foundations of buildings seem to be of much later (Hellenic) date. See "*Mon. Ant.*," vol. xiv, 349, 354.

¹ Its actual height above the general level of the rebuilt palace is slightly over 12 ft. ("*Mon. Ant.*," vol. xiv, 385.)

a side stairway just within the north doorway. This corridor had at the end, where it emerges into the peristyle court, a large central column, illustrating the Cretan propensity for bisected entrances and double doorways. From the somewhat scanty remains of the court it is evident that it had a central space open to the sky about 26 feet square, surrounded by twelve wooden columns which supported a covered portico about $6\frac{1}{2}$ feet deep on each side. Though there are no indications of the shape of the columns or the nature of the roofs it is evident that this cloister-like space must have formed a picturesque feature in the interior of the palace and a convenient, if somewhat tortuous means of communication between the grand entrance on the west, the central court on the south, and the more private apartments on the north and east. In place of a back wall on its north side it had a series of narrow pillars, or door-jambs, leaving seven openings which may have communicated with a hall or megaron over the small sanctuary on the lower level (see *ante*, p. 98), thus forming a vestibule and light-well conjoined.¹

The rest of the buildings on the north of the central court are on the lower level, and possibly formed part of the earlier palace, for they show signs of alterations. An open rectangular court which gave light and air to small surrounding rooms was paved with cement, but an older pavement of polygonal slabs of limestone was found ten or twelve inches below it. A similar alteration had been effected in the area which lay on the east side of the central court, where there are a few remains of a pillared hall at the north end of an open space, though nothing of architectural interest remains.

¹ Noack, "O. and P.," p. 24.



PLAN OF THE PRINCIPAL BUILDINGS AT HAGIA TRIADA
(From Noack's "Ovalhouse und Palast in Kreta.")



HAGIA TRIADA : MEGARON AND BELVEDERE FROM THE EAST
(Mosso.)

CHAPTER XIII

HAGIA TRIADA

THE development of the columnar system which is noticeable at Phaestos is no less evident in the remains of the smaller palace or royal villa at Hagia Triada. It lies on the northern slope of the hill about a mile and a half to the west of Phaestos, of which it must have been a dependency.¹ From the earthenware remains found on the site it appears that it was occupied by smaller houses in the Middle Minoan period.² The first large villa was contemporary with the later palaces of Knossos and Phaestos; it must therefore, with its

¹ Mosso (p. 78) remarks that the sea must originally have come to the foot of the slope on the west. The bay, however, has gradually silted up, and the mouth of the small river which flows along the north side is now more than three miles away.

² "Mem. R. I. Lombard." vol. xxi, p. 245.

contents, have represented Cretan art and culture in their latest development. Like them it had a spacious court, the longer axis of which lay east and west with a pillared portico—as at Phaestos, on both the north and south sides. The buildings on the south have, however, disappeared, and the existing ruins, the walls of which stand somewhat higher above the ground than at Phaestos, occupy for the most part the north side and west end of the rectangle. At the east end of the main building is a flight of twenty-two steps (A) ascending the slope from what may have been the principal entrance on the north side of this wing, and several smaller flights provide means of communication between the various levels on which it was built. The principal megaron (B) was at the west end, with its axis parallel to that of the court. It was larger than any similar hall found in the other palaces;¹ but it had the same general arrangement of parts, viz., a fore-hall which, in this case, was the largest division, an inner room, and a light well. The northern side of the fore-hall had six openings separated by the narrow door-jambs found in other Cretan megara, and forming the south side of a small square peristyle court or cloister (c), open in the centre, with a covered portico along each side. The angles of the peristyle were formed by four heavy rectangular pillars between which, on each side, was a single circular column. It had a general resemblance, on a smaller scale, to that at Phaestos, but it appears to have been open on the north side, forming a belvedere from which a fine view of the mountains was obtained. (See illustration, p. 105.)

The megaron differs from others in having a small room of less width beyond the light-well on the west, from which it also was lighted. It is about 16 feet long

¹ The main rectangle, apart from a small extra room at the east end, is about 56 ft. × 20 ft.



HAGIA TRIADA : FLIGHT OF STEPS AT NORTH ENTRANCE
(Mosso.)



HAGIA TRIADA : SMALL ROOM AT THE WEST END OF THE MEGARON
(Mosso.)

by 11 feet wide, and has benches on the three walls: these and the panelling of the walls were of alabaster, and there are various signs of its having been very handsomely decorated.¹

Opening from it on the north side is a small chamber, probably a sleeping-room, which has, in one corner, a slab of gypsum about 6 feet long, not unlike the "plaster couch" at Knossos (see *ante*, p. 74).

Immediately to the east of the peristyle court, but apparently separated from it by a wall, was a small nearly square hall (D), the north, east, and south walls of which consisted of rows of door-openings, indicated by the familiar gypsum bases. It is described by Dr. Halbherr as one of the most beautiful, with a fine gypsum pavement. It is adjoined on the east by two smaller chambers, one of which may have been a bedroom. The remains of gypsum linings and frescoed walls suggest some special quality in these apartments, yet, strange to say, there was on the south side of (D) a latrine of primitive construction communicating with a cess-pit in the adjoining corridor, suggesting a stage of refinement and sanitary science considerably below that indicated at Knossos.²

Somewhat farther to the east is a square room (E) with a floor of gypsum which has a slight slope from the walls to the centre, where stood a rectangular stone pillar evidently, like those at Knossos, of a cultural character. A number of small rooms, evidently magazines, occupied the centre of this wing, and beyond those lay what may have been the women's quarter. Three elongated chambers (F), side by side, with their axes east and west, communicated with each other by doorways, indicated by their jamb-bases, and formed a sort of composite megaron, with an inner hall and light well for each. A

¹ See Mosso, p. 82.

² "Mem. R. I. Lombard." vol. xxi, p. 244.

single door on the south led to a smaller side-room with a seat at the east end under a window opening into another light-well (G). From this chamber or ante-room, as it seems to have been, a door opened to an external staircase leading upwards to the level of the court. That there were upper rooms on this higher level is obvious, but the destruction of the building by fire, and



HAGIA TRIADA : ROOM WITH WINDOW AND SEAT

the later construction of another on different lines has obliterated all traces of them.

Though the history of the palace is similar to that of the larger ones, in that it was destroyed by fire and afterwards rebuilt, the similarity ends there: for in this case the most important building was contemporary with the later phase of Phaestos, and the last one was constructed amid the changed circumstances which

resulted from the invasion of Crete by a hostile, if not alien, race. Though few definite traces of this last phase are left, it represents, as Noack points out,¹ a third period in the palace architecture of Crete. There is a difference also in the method pursued in the rebuilding. At Knossos, as we have seen, many of the old substructures were used again. At Phaestos a large part was covered with concrete, and in the north and west parts of the site platforms at three different levels were occupied by new buildings. At Hagia Triada, which was rebuilt on a smaller scale, a third method was adopted. Amid the old basements on the north side of the central court massive foundation walls were introduced in two separate blocks, between which was room for a stepped passage from the north to the higher level of the court on the south. The larger block of foundations on the west of this passage forms a rectangle 105 feet long by 52 feet wide (HH), and this area was divided by three transverse walls of solid masonry. It is to be noted, however, that not only were the old foundations ignored, but—unlike the method followed in the other palaces—the orientation was also slightly altered, for the side lines of the rectangle thus formed make an acute angle with the axis of the older building. When the compartments of this substructure were filled up with rubble the whole would form a solid platform for new buildings probably of comparatively light construction, the main walls of which would not necessarily coincide with those of the retaining walls of the platform.²

¹ Noack, "O. and P.," p. 33.

² It has generally been assumed that a single building occupied the whole of the rectangle; and the apparent indication of a division at the west end led to the supposition that the walls were the foundations of a temple with an "opisthodomos" built on the site at a much later date, as was the case at Mycenae. Dörpfeld, on the other hand, supposed them to represent a megaron of the type found at Tiryns and other mainland sites (see Hall, "Aeg. Arch.,"

The block on the east side of the passage-way formed a similar but much smaller platform with a spur or bastion at its north-east extremity, where it abutted on the staircase which had apparently formed the principal northern entrance of the earlier palace. This was retained intact except for a slight adjustment at one side due to the different orientation of the new wall. This eastern terrace seems to have been mainly occupied by an open portico facing south.

Of buildings on the main platform there are no indications, but attached to the south side and standing out into the court are the footings of a small rectangular structure (κ), with a column base on its east side, which its excavators took to be a kind of pavilion,¹ but which others regard as an entrance porch similar in plan to those on the south-west at both Knossos and Phaestos,² and which in that case seems to imply that this later palace was still built in the old Cretan style. Further west in the court, and apparently of the same date, are the remains of a pillared portico which may have formed the principal entrance of the court when it was finally laid out for a building much reduced in scale.

Except as an interesting problem the remains of this latest building on the site at Hagia Triada are insufficient

p. 131). These theories are disputed by Noack ("O. and P.," pp. 25 *sq.*). Though the other remains, mentioned below, of the same date show an affinity to the palace architecture of Crete it is difficult to recognize in these foundations the divisions of a megaron of either the Cretan or the mainland type. The rectangle is nearly $4\frac{1}{2}$ times the area of the largest hall elsewhere in Crete, and more than double that of the large megaron either at Tiryns or Troy II. It seems, therefore, allowable to suppose that the lines of masonry are merely the retaining walls or supports of a platform on which several different apartments of a composite dwelling were erected.

¹ "Mem. R. I. Lombard." vol. xxi, p. 241.

² Noack, "O. and P.," p. 31; Dörpfeld, "Ath. Mitt.," vol. xxxii, p. 587.

to be of much architectural value. But the larger palace, or villa, which preceded it has proved a source of the greatest interest not only because it illustrates, so far as this can be done by the foundations, footings, and lower walls, the condition of Cretan architecture at the culminating period of the civilization which produced it, but also on account of the remarkable nature of the objects of art which its exploration has brought to light. Some of these are apparently importations from Egypt, and this fact, combined with the number and value of other objects, including a considerable hoard of pure copper, has led to the supposition that in Minoan days there existed here a seaport and emporium for the lord of Phaestos.¹ One of the most remarkable objects is a stone coffer painted on the sides with scenes depicting funerary rites. As it is only 52 inches long, the body which it once contained must have been inserted in a contracted position: and the cover no longer exists. The work is plainly suggested by Egyptian art and ritual, and though it is roughly executed and probably belongs to a very late date in Minoan chronology, after the general catastrophe,² it helps to show that the intercourse with Egypt, of which there is evidence from the earliest period, was continuous to the last.

Another celebrated and very interesting object is the upper half of a steatite vase, formerly coated with gold which depicts a procession of rustics marching three or four abreast and carrying curious flail-like implements. Some of them are singing open-mouthed, behind a conductor who carries a musical instrument something like an Egyptian sistrum.³ Other vases or rhytons of the

¹ See Mosso, p. 80.

² See Sir A. Evans in "J.H.S.," vol. xxxii, p. 280.

³ The meaning of this scene has been much discussed, Dr. Savignoni, one of its discoverers, having devoted many pages of

same material which have frequently been illustrated show similarly interesting and characteristic Cretan scenes.

the "Monumenti Antichi" (vol. xiii) to the matter. It seems probable that it represents a celebration of the olive harvest, no doubt an important event in Crete, the peculiar implements carried being flails by which the fruit was struck down, like walnuts, as it is still, from the trees. A comparison with the frieze of the Parthenon, in which the *thallophoroi* preceded by music appear, and the fact that a jar of olive oil was a prize in the Athenian contests, suggests that this Cretan procession was a primitive form of a custom which in later ages was incorporated in the Panathenaic festival. Illustrations of this vase and other objects mentioned are given in Hall's "Aegean Archaeology," and many other books.

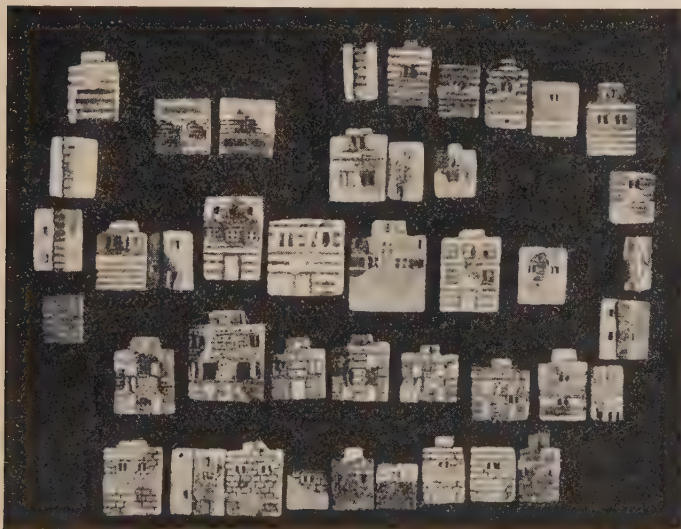
CHAPTER XIV

CRETAN TOWNS

THOUGH the remains of the great palaces afford a fairly complete idea of their ground-plans and extent, and some highly interesting evidence of their arrangement in storeys, it is difficult to form any definite conception of their elevations, and the character of their fenestration and roofing. Their situation on irregular ground, terraced at different levels, makes it tolerably certain that no balanced distribution of masses subservient to a comprehensive architectural design was recognized, and their skyline must have presented considerable irregularity suggesting an assemblage of independent buildings rather than an organized whole. This general conclusion is not invalidated by the fragments of the miniature fresco found in one of the north-west rooms at Knossos which seems to represent a symmetrical front of some small portion of the palace with balconies from which spectators are witnessing some sport or ceremony in the court below (see p. 127). That symmetry in small designs was a recognized principle is quite evident in the collection of earthenware tiles representing ordinary house-fronts, found by Sir A. Evans in one of the basement rooms at Knossos.¹ These show that the houses consisted of two or more storeys, with a central door on the ground floor and windows with subdivided frames balancing each other on the floors above. Some appear to show the back of the house,

¹ They are supposed by their discoverer to be of rather late Middle Minoan date, *i.e.*, *c.* 1750 B.C. See Evans, pp. 249, 302.

with no door, and small windows or none at all, which leads to the supposition that towns were built with the outer row of houses close together and facing inwards so that the backs formed a continuous defensive wall.¹ It is conjectured that in the absence of glass the window panes may have consisted of talc, or of oiled parchment.²



[B.S. A. An.

TILES REPRESENTING HOUSE FRONTS

The roofs appear to have been flat with, sometimes, a small attic in the centre. Their appearance is not unlike that of smaller Egyptian houses as figured on wall-reliefs.

The actual remains of private houses which existed in

¹ This is said to have been the case at Sinjerli in North Syria. See "Early Arch. of W. Asia," p. 91.

² See Hall, "Aeg. Arch.," p. 122; Evans, p. 303.

the neighbourhood of the palaces show that they were, in some cases, of considerable size with numerous rooms. Several have been found close to the south end of Knossos. A private house, near Hagia Triada, has a magazine or store-room in which were found a number of *pithoi*, a large bathroom, and other ground-floor chambers containing ceramic remains of considerable interest. Near Knossos Mr. Hogarth excavated the foundations of many houses which appeared from their size to be middle-class dwellings; but they are for the most part too scattered to give an idea of the planning of a Cretan town of the period. Evidence has, however, gradually accumulated that Knossos was a very large unwalled settlement extending round the palace in all directions and numbering many thousands of inhabitants.

At the east end of the island several sites have been disinterred from which some idea of the plans and alignment of smaller Minoan towns may be formed.

At Palaikastro, situated in a bay at the extreme east, a seaport may have existed from an early period of the Bronze Age. Its most prosperous time coincided with that of the later palaces, when it appears to have consisted of a long street running westward from the sea, with smaller roads branching from it on either side. Some of the houses were of considerable size, with halls corresponding to the *megara* of palaces and many smaller chambers.

A less extensive, but more complete and typical town site, is that at Gournia, near the eastern end of the north coast.¹ The town lay less than a mile from the sea on the east slope of a pass through the mountains at the narrowest part of the island, where the distance from sea to sea is barely eight miles. Its flourishing period

¹ Excavated by Mrs. H. Boyd Hawes for the Exploration Society of Philadelphia. See "Gournia, Vasiliki and other Prehistoric sites on the isthmus of Hierapetra," Philadelphia, 1908.

was at the beginning of the Late Minoan age, though a few of the houses are of earlier date. Others seem to



PLAN OF GOURNIA

(From "Gournia, Vasiliki, and other Prehistoric Sites.")

have been built during the period of reoccupation after the general catastrophe which befell the whole of Crete.

After that period the site was on some occasion deserted, and was by degrees buried, until its discovery in recent years. Hence it has something of the character of a prehistoric Pompeii, preserving relics of the domestic life of its ancient inhabitants *in situ* and untouched.

The site is very uneven, being an elongated hill lying north and south, on the highest part of which stood a small palace or governor's residence. Two narrow streets lead from the north end up to this acropolis, giving access to it on each side, and further on to a public court or agora which occupies the south end of the site.

On the east side a complex of crowded houses constitutes the main portion of the town. On the other side the western street lies nearer to its outskirts, and apart from what must have been the business quarter. But a narrow passage, a little to the north of the palace or "residence," ascends eastward with a few steps to a rectangular enclosure which, from the collection of small images and cultural objects found within it, was evidently a shrine or sanctuary, and probably the religious centre of the town (s in plan).

The small scale of everything is somewhat remarkable, for the widest street is barely 5 feet across; but this is explicable in an age when wheeled traffic was unknown, and is not without parallel in some mediaeval towns of western Europe.

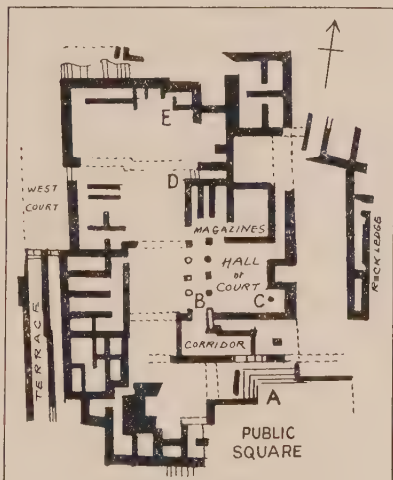
The dominant residence has some of the characteristics of the larger palaces, in the shape of magazines and corridors which were no doubt the substructures of larger rooms, but the confined extent and unevenness of the ground has limited the central court to small dimensions.

The entrance (A) was by a flight of four steps at the north end of the public square, and these steps were returned at the west in the same manner as the much wider flights above the theatral area at Knossos. At the

top of the steps a doorway opened into a short corridor which led to the west and then almost immediately turned north towards the court. Here it was continued by a portico or roofed walk (B) across the centre of the court, about 30 feet long, between two lines of pillars, alternately rectangular and circular in section, recalling the similar alternation in the lateral porticoes at Phaestos.¹ Here, however, whilst the cylindrical columns must have been of timber, the rectangular pillars were of stone.² It has been suggested that the part of the courtyard on the east of this portico was covered, but the absence of further supports for a roof seems opposed to this view.

At the south-east corner of this space was a small roofed recess or rectangular exedra, with the single central column in the front which is characteristic of Cretan porches (c).

The mass of buildings on the north is represented only by substructures, the upper floor of which was reached by a few concrete steps (d) leading upwards from west to east. The upward slope of the ground in that direction is so great that it is supposed that the western portion may have had two upper storeys—in which the



GOURNIA : PLAN OF CHIEF RESIDENCE
(Boyd-Hawes, "Gournia.")

¹ See *ante*, p. 97.

² See "Gournia," p. 25, col. 2.

principal rooms would be included in the north-west quarter—whilst the intermediate portion would have only one upper floor, and the eastern side only a ground floor.

At the extreme north there is what appears to have been a bathroom (E), the floor of which is sunk by a few inches. It has no resemblance in plan to the supposed private sanctuaries which occur in the larger palaces.

Other Minoan sites which have been explored are Zakro, at the extreme east end of the island, and Vasiliki, on the isthmus of Hierapetra, a few miles south of Gournia. Here also the streets are extremely narrow, though the houses may have had more than one storey. At Tylissos, not far from Knossos, on the west, there are the remains of important dwelling-houses.¹ All these sites are highly interesting, but more from the ceramic ware and bronze objects which they have yielded, than from any special architectural features which need be dealt with here.

¹ See "Tylissos à l'époque minoenne." By J. Hazzidakis. 1921.

CHAPTER XV

TECHNICAL DETAIL

SO far as the technical methods employed by Minoan builders are concerned, it appears from a study of the palace at Knossos that solidity of construction is more characteristic of Early and Middle Minoan masonry than of the Late period, when greater skill in the use of stucco and in the decoration of wall-surfaces gave opportunities for less substantial work.¹ The massive stonework near the north entrance, and the substructures of the earlier palace, which still remain whilst the later gateways at the south and west have collapsed, sufficiently indicate this.

The actual foundations of walls usually consist of rough limestone blocks, the interstices being filled with smaller stones and clay mortar. Lime was used only in concrete floors and in the final coating of stucco-covered walls. Visible substructures, and interior walls which were directly exposed to the weather, were always faced with ashlar, which was generally of limestone. The lower courses of the west wall at Knossos appeared as large squared blocks of gypsum resting on a projecting plinth. On investigation it was found that they consisted of a double line of parallel blocks smooth on the outside, but rough internally, the space between being filled in with rubble, a method of which examples are found in mediaeval and even more modern work. In this case at Knossos the space between the outer and

¹ In some cases stucco is found painted in imitation of marble or grained wood. The use of coloured stucco became very common in the Late Minoan period. (Evans, p. 356.)

inner face was kept uniform in width by transverse ties of timber mortised into the upper edges. Above these lower courses the wall was probably continued upwards in rubble or sun-dried bricks spaced at intervals by horizontal timbers, a mode of construction which may still be observed at the east end of the Hall of the Double



[*Evans, P. of M.*

KNOSSOS: INTERIOR OF THE WEST WALL

(Showing cavity, which was filled with rubble, and mortises for cross-bars.)

Axes. The whole was then plastered over and coloured so as to hide the difference between the various materials. The sun-dried bricks have entirely disappeared, but may be represented by deposits of red earth or incinerated clay which occur amongst the ruins.¹ The use of kiln-baked bricks is not evident at Knossos, though they are met with in the eastern parts of the island.

¹ See "B.S.A.," vol. xi, pp. 3, 23.

Inner partition-walls were often built up of rubble or roughly trimmed small stones interspersed with horizontal ties of wood inserted at intervals of a few feet. This method was very old, for it is found in the walls of Troy II, and is a practice which seems to suggest itself in all times and places where wood is available and labour not superabundant.¹ It goes far to explain the sweeping effect of fire, for a heat which stone or solid brickwork would withstand fires and carbonizes the timber courses, and leads to the spreading of the fire as well as to the disintegration of the whole wall.

A peculiar form of this use of timber is seen at the back of the Hall of Double Axes (see p. 69), where a course of cylindrical wooden blocks was laid transversely. Though only the space which they occupied is now visible, they must have appeared on the surface of the wall as a row of wooden disks. They suggest an origin for the decorative use of disks and cylinders which is found elsewhere, as on the well-known dove-columns from Knossos, or in the capital of the stele between the lions of Mycenae.

The pavements are found in four forms. The earliest kind consists of large and thick limestone slabs of irregular shape and uneven surface. These have in some cases been overlaid by a finer and more finished floor of polygonal slabs of iron-stained and closely grained limestone, the joints being filled with white and red plaster. The latest pavements consist of gypsum slabs sometimes laid with geometrical regularity. In small open courts and light wells the floor is made of concrete. At Knossos, in the south-west porch and the Corridor of the Procession, limestone slabs bordered on each side by a strip of bright red stucco must have made an effective combination.²

¹ See "Early Arch. in W. Asia," p. 80. Cf. Evans, p. 347.

² See *ante*, p. 59, and "B.S.A.," vol. vi, p. 12.

The upper floors which remain in the domestic quarter at Knossos are of stone and must have been supported by substantial balks of timber. This is also clearly indicated in the remains of the Royal villa.¹

The form of the narrow pillars or door-jambs which, with their doors, formed walls or divisions in the Cretan *megara*, is shown by their gypsum bases, which have an elongated **T** or **I** shape. The upper portions were built up with timber quoins, and filled up with rubble masonry. The whole was then covered with rough-cast made of clay mixed with straw and finished with a coating of stucco. The longer sides had shallow recesses corresponding to the plan of the bases, so that the wings of the double doors which turned on vertical pivots could fall back into the recessed sides of the jambs and leave an unimpeded gangway. The circular bases of the wooden columns were frequently rough blocks of limestone sunk in the flooring, and worked on the upper surface into a slightly raised disk, as may be seen in the south-west porch at Knossos. In other cases they consisted of a circular slab with a chamfered edge inserted in a round hole in the pavement or stylobate. In a few cases, as in the newel post of the steps which led into the tank-like sanctuaries, a quadrangular plinth had a circular base worked on its upper surface.² Bases of early date were made higher, and had the form of cylinders. One found at Phaestos was about 1 foot 8 inches high, with a diameter of 2 feet 4 inches.³ Two at Knossos were cut out of black breccia with white and orange markings. The use of these black bases is indicated in some of the representations of colonnades in wall frescoes. The flat bases of later date were of limestone or gypsum.

The forms ordinarily used for columns are not well

¹ See *ante*, p. 88.

² "Mon. Ant.," vol. xii, 30.

³ Evans, p. 211.

established, for though the circular bases remain, the columns themselves appear to have been always fashioned from tree-trunks, in many cases of cypress, and have almost entirely disappeared. Those in the hall and on the parapet of the quadruple staircase at Knossos have been reconstituted by Sir A. Evans in accordance with a form shown on frescoes in which the shaft increases in diameter upwards with a large bulbous capital. The carbonized remains of a cypress-trunk found in the Hall of the Double Axes, seems to justify this restoration, but its accuracy is not universally admitted.¹ The fact that he also found the charred remains of a column on the upper part of the staircase which appeared to have had a fluted surface² leaves the matter somewhat uncertain. As to the inverted conical form, there can be no doubt that it was sometimes used, and it may well be supposed that when a tree trunk was first used as a support, the smaller end was inserted in a hole in the stone base, whilst the larger one was used to discharge the function of a capital in giving a wider supporting surface. It may also be a fact that a stripped tree trunk weathers better when it is reversed.³ In this way the form in question may have originated and become conventional, especially for external colonnades. It also appears in representations on seals of what seem to be sacred stelae or pedestal altars. On the other hand there are scenes on vases which show columns diminishing upwards with rectangular capitals. Various other forms are shown in miniature as lampstands.

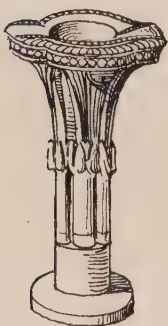
The most direct evidence of the shape of an actual

¹ The Bavarian architect, Prof. J. Durm, thinks that this form of column was limited to decorative or symbolic designs, and was not used structurally; but his argument is not conclusive. See "*Jahreshefte d. Oesterr. Arch. Inst.*," vol. x, pp. 56 *sq.*

² "*B.S.A.*," vol. vii, p. 105.

³ See R. Phené Spiers's paper on Knossos, "*Architectural Review*," vol. xiii, p. 94 *n.*; also Choisy, vol. i, p. 234.

column is that already mentioned in the description of the Little Palace at Knossos (*ante*, p. 85), where it had the form of a cluster of cylindrical shafts, an idea which may have been derived from Egypt.¹ An Egyptian influence is very obvious in a lamp pedestal on which slender stems in relief have bud-like tops, evidently imitated from Egyptian lotus capitals. That the magnificently developed columnar system of Egypt, which culminated in the XVIIIth dynasty, had a widespread influence which was felt in Crete cannot be doubted, but here, as in other forms of art, it did not go beyond suggestion. The Cretan builders never aimed at such imposing architectural achievements, and carried



LAMP

out their timber-columned porticoes and piazzas after a fashion of their own, with the freedom and independence which gives all their art its singular interest. The curious rectangular capital with a border of small disks which is shown on some of the representations, seems to be original, and was probably a block of wood covered with painted plaster. The use of timber in all light structural work prevailed throughout the Minoan era, and, with the exception of a few pilasters, there is nothing to show that stone was ever regarded as an appropriate material for cylindrical columns.



COLUMN FORM
(From vase-
relief.)

The destruction of the upper parts of walls and the consequent disappearance of cornices and roofs make it impossible to form a definite idea of the elevations of

¹ See "Arch. of A. Egypt," p. 121.



[B.S.A. An.

An open gallery with the Horns of Consecration, double
axe-head in the pillars, and a band of rosettes



[Hellenic Soc.

An architectural front showing the symbolic horns between pillars
and the bisected rosette

KNOSSOS : MURAL FRESCOS

Cretan palace buildings. It is generally assumed that roofs were flat, and composed of a layer of hardened earth supported by small timber laid across strong beams. The frequent indications of the use of vertical supports, both in the substructures and on the ground level, point to the same conclusion. It is only when a wide span with no intermediate support, in a neighbourhood where large timber is deficient, that a gabled or a jointed timber roof may be necessary.¹ If gabled roofs were in use at all, it may be supposed that even if they were not structurally called for, they would have been adopted for some of the porticoes or megara which



SCULPTURED FRIEZE

[B.S.A. An.]

occupied conspicuous positions, but there is little evidence that this was the case. Sir A. Evans illustrates some Cretan seals which show gabled buildings or porches.² But on the other hand the miniature fresco representing part of an architectural façade shows a design which rises in horizontal stages, and a similar form is indicated in the plaques of house fronts, and some metal ornamental plates which appear to represent the fronts of shrines.

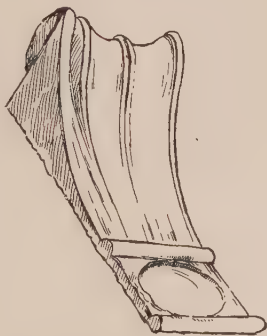
A very common decorative "motive," which continued in frequent use in classic art, was a rosette or corolla of aster or marguerite. In Cretan art it was often elongated laterally and bisected by a transverse vertical band of fillets, sometimes plain, but often more elaborately ornamented with spirals or smaller rosettes. When

¹ See *ante*, p. 21 *n*.

² See Evans, p. 674.

out in stone with the interstices filled with a deep blue vitreous enamel it recalls the Homeric *kyanos* and helps to give reality to the description of the palace of Alcinous (Od. vii, 86). A horizontal band of these ornaments, sometimes rather deeply and sharply cut, seems to have been used as a kind of frieze or string-course across the fronts of portals or along internal walls. A faint resemblance to the later Doric frieze led to their being called "triglyphs" when first found at Tiryns by Dr. Schliemann. But as they occupy no special position in Cretan architecture, and as the same design is found as a coloured ornament on pottery, it is unfortunate that any connexion with the Doric triglyph, which almost certainly had a structural origin as the end of a timber beam, should have been suggested.¹

Another ornament, not uncommon, consists of a small bracket about 3 inches in length. In shape it is evidently a primitive form of the Greek console or modillion used in the later



MODILLION-LIKE ORNAMENT

examples of the Corinthian order. A small brass matrix in the Ashmolean Museum, and a similar mould in granite, $2\frac{3}{4}$ inches long, figured in Schliemann's "Mycenae" (p. 107), indicate that it was used in the manufacture of small works of art. It is known as the "curled leaf" ornament, and from some curious varieties of it in gold and glass-paste which have been found in tombs, it seems likely that it was derived from some form of vegetation. It appears to have been used for stringing on cord to form a necklace or for stitching on

¹ On this point see Durm's article referred to on p. 125.

some fabric as a head-dress. (See illustrations in "J.H.S.," vol. xlv, p. 2, and "B.S.A.," vol. xxv, pp. 397 *sq.*)

As will be seen, all these decorative motives were adopted on the mainland wherever the influence of Cretan culture penetrated.



PHYLAKOPI, MELOS: THE TOWN WALL AT THE WEST END
(From Excavations at Phylakopi, "B.S.A.")

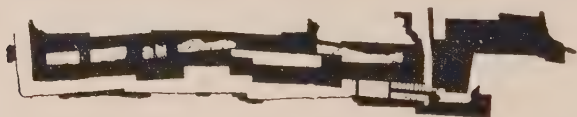
The above shows the Middle Minoan wall on the landward or south side. The revetment is seen on the left, and the Later Minoan bastion shows a straight joint between it and the wall. The main part of the town, the wall of which is not excavated, lies to the north-east.

CHAPTER XVI

FORTIFIED TOWNS—PHYLAKOPI AND TROY VI

BY the middle of the second millenium B.C. Crete had already attained a stage of civilization scarcely inferior and, from a modern point of view, in some respects superior to that of Egypt. At the same time the island seems to have acquired a maritime supremacy in the Aegean which gave it immunity from attack and favoured its social development. This peaceable condition was apparently not shared by some of the other islands. Melos, more particularly, from its relations

with the mainland, and from its prosperous trade,¹ was peculiarly liable to attack. The excavation of its chief town, Phylakopi, which lies in a bay on the north-west coast, has given evidence of a history almost as long as that of Knossos. An open town, built about 3000 B.C. on the site of a neolithic village, was partially destroyed and rebuilt in the Middle Minoan period with a double wall, an exterior revetment, and an intervening ditch. Hostile attacks seemed still to have occurred, for the whole town was rebuilt and the inner wall greatly strengthened in the Late Minoan period. The remains of the palace or chief's house, which was built at this time, show, by the simple and self-contained form of its megaron, in which it differed completely from the Cretan type, that Melos



PLAN OF THE TOWN WALL AT THE WEST END. ("B.S.A.")

shared the architectural ideas of the neighbouring mainland rather than those of Crete. The Cretan type of megaron remained peculiar to that island. For elsewhere, whether on the mainland of Peloponnesus, or on the Asiatic coast at Troy, a different traditional type of palace and megaron is followed with more or less regularity, notwithstanding the fact that in decorative motives and technique in ceramic ware and metal-work there is convincing evidence of the influence of Cretan art.

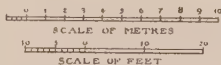
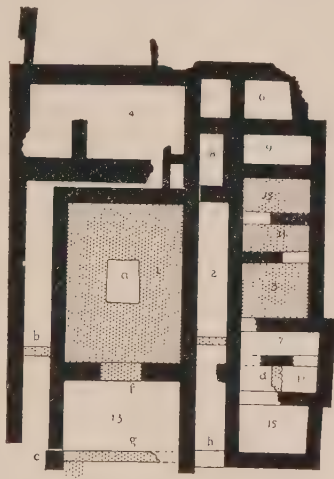
The fact that three strongly fortified towns, Tiryns, Mycenae, and a new Troy—to say nothing of others, such as Argos, Corinth, and Athens, where little early evidence survives—all rose to wealth and a high degree of

¹ See *ante*, p. 9.

culture during the later period of Crete, may indicate that the predominance of the last was already being challenged, and have been a presage of its coming downfall. In any case it brings into prominence the prevailing importance of military architecture, of which Troy, from its ancient greatness and historic fame, may be taken as a leading example.

THE SIXTH CITY OF TROY. After the destruction by fire of the second, or pre-historic, fortress,¹ the site of Troy became a heap of dust and débris from which only the remains of the massive walls emerged. The upper portions of the demolished buildings had gone to fill up their basements, and thus the general level of the surface was raised by several feet.² On this level later settlers built a new town or, rather, enclosed village, repairing the old walls and contracting in width such of the entrances as still continued in use. The houses were

mostly small single-roomed cottages, built of rough stone with clay joints. The largest house of which any portions were left by later builders had walls of 2 feet 4 inches thick, built in horizontal sections of crude



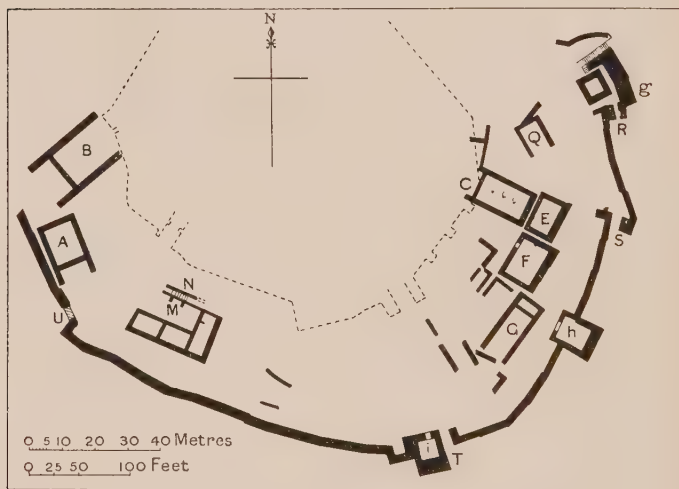
PHYLAKOPI: PLAN OF THE PALACE
AT THE NORTH-EAST END OF
THE TOWN. ("B.S.A.")

The megaron (1) has a plaster floor,
with a rectangle of clay in the
centre for the hearth.

¹ See *ante*, pp. 13 *sq.*

² Dörpfeld, p. 99.

bricks, alternated with layers of stones. Elsewhere there were few signs of brickwork, and it is probable that the material employed was chiefly derived from the stone foundations and footings of the earlier walls. The population was apparently agricultural, differing altogether from the military community which had previously possessed the site.



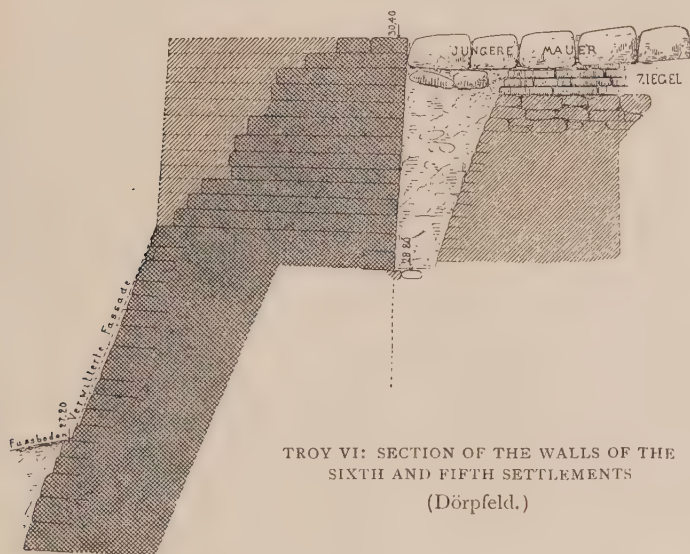
REMAINS OF THE SIXTH FORTRESS OF TROY. (Dörpfeld.)

The extent of Troy II is shown by the dotted line.

In course of time it was succeeded by two other settlements the foundations and walls of which have been discriminated at higher levels. The later of these, known as the Fifth, appears to have been considerably enlarged with a new wall on the west, south, and east sides, evidence of which remains behind the walls of the Sixth or historic city.¹ From the thickness of the

¹ Dörpfeld, p. 124.

strata which represent these successive periods of occupation it has been estimated that they cover a period of not less than 500 years ¹ (probably *c.* 2000-1500 B.C.). After lying deserted for some further period the site was appropriated by a more warlike and more civilized clan—a branch, possibly, of the same Thrako-Phrygian race to which the earliest settlers are supposed by some



TROY VI: SECTION OF THE WALLS OF THE
SIXTH AND FIFTH SETTLEMENTS

(Dörpfeld.)

to have belonged—who erected a larger and more strongly fortified town which is now identified with the Homeric city.

New walls were constructed, in some places just in front of those of the fifth settlement. They included a much larger area than those of the second fortress; their total circumference being about 600 yards. Of these

¹ Dörpfeld, pp. 107 and 31.

about 360 yards, mostly on the south and east, still exist in a more or less substantial condition.¹ But unlike the early ramparts of unbaked bricks, they were mainly built of stone. Upon a foundation of rough masonry laid in receding courses a wall, which varied in height according to the inequalities of the ground, was built up in well jointed ashlar with a considerable batter, above which was a vertical upper wall constructed in its earlier form of unburnt brick.

On the west side of the town, where the work is less carefully finished, and was probably the earliest in date, the height of the stone base above the ground is about 8 feet, but on the east and south sides it measures 19 feet, and the stones are larger and more carefully dressed. Towers were erected at irregular intervals, but from the straight joint which connects them with the walls it may be inferred that they were added at a later date. The brick upper walls were replaced afterwards by a thinner screen of small brick-like stones,² though in some places, particularly in the tower at the north-east angle, remains of the brickwork can still be seen. The perimeter of the city is roughly elliptical, but the wall is actually polygonal in plan, the face consisting of plane sections from 10 to 13 yards long, the angles being marked by vertical offsets varying in depth from 3 to 6 inches. As these projections are obviously too shallow to serve any military purpose it must be assumed that they have some structural or architectural object. It is to be observed that they occur also in corresponding positions on the inner sides of the walls, and on the back walls of two of the interior buildings.³

¹ Dörpfeld, p. 112.

² *Ibid.*, pp. 111, 124, 139. The brickwork was 15 ft. thick, but the stone which replaced it was only 6 ft. (*ibid.*, p. 121). Dörpfeld (p. 124) explains the varying quality of the masonry by the gradual reconstruction of the older walls.

³ This peculiarity is common to early fortifications in various places. It occurs at Tiryns, and is found in stone and brick walls

The character of the masonry is best seen on the south and east sides. It is evident that the walls were built at intervals, superseding and extending in parts the simpler rampart of the preceding settlement. The latest portions are those on the south, where the blocks are large, sometimes five feet long, and well jointed. On the



TROY VI : THE TOWN WALL ON THE EAST
showing the offsets and, in the foreground, the side walls of the tower (*h*).
[(Dörpfeld.)]

north all the walls seem to have been destroyed in ancient times.

Remains of three towers still exist—at the north-east

at Abydos and Philae in Egypt; but in these cases the sections of the walls have been constructed separately, with a straight joint between them, which is not the case at Troy. The most marked instance occurs at Goulas or Gla in Bœotia (see *post*, chapter xix). A possible explanation is that it was a substitute for the buttresses or broad pilasters such as are common in the ancient buildings of Mesopotamia.

angle (*g*), on the east (*h*), and on the south (*i*). The sites of four gates are still well marked by foundations, but that at *U*, on the west, appears to have been closed before the destruction of the town. On the south, *T* was probably the principal entrance, and the tower (*i*) on its west side must have been built to defend it. The eastern gate (*s*) was protected in a different manner, for a section of the wall on its north side was advanced so as to overlap that on the south, whereby an enemy could be enfiladed on both sides before reaching the actual gate—a mode of defence which will be seen more elaborately developed both at Tiryns and Mycenae. The tower *h*, about 31 yards to the south, also protected it from the rear. The fourth entrance (*R*) was a narrow side-door with steps, and was well secured by the exceptionally strong bastion or tower *g*.

It is probable that there was another entrance at the north-east corner, and possibly also at the north-west, but the steepness of the slope on the north side of the town makes it unlikely that there was a gateway in that portion of the wall. It is remarkable that none of the existing gates show the symmetrical and double-fronted plans which are found in the earlier fortress or in the more contemporary city of Tiryns.

The walls of the towers are slightly battering and two of them, *h* and *i*, contained rectangular chambers. That adjoining the gate *T* was entered by a door in the inner wall: the other had no visible entrance, but about 10 feet from the ground-level inside are indications of its having had a wooden floor, from which it is evident that it must have been entered by steps or a ladder from above.

The great north-east tower or bastion, a massive and imposing structure, stood on sloped footings rising about 10 feet above the ground, above which was a wall of about 20 feet high of solid and slightly battering



TROY VI: THE NORTH-EAST BASTION AND THE LATER STAIRS OUTSIDE IT
(Dörpfeld.)

masonry. On the top of this still remain some portions of the parapet of crude brick which originally formed the crest of all the walls. The interior of the tower contained a large well with a rectangular aperture of about 13 feet square surrounded by a parapet 2 feet thick. Though this well continued in use after the fall of the city, it was eventually filled up and hidden, with the ruined walls and towers, by the accumulated rubbish and detritus of centuries. When, during the seventh and sixth centuries B.C., Greek colonists settled on the site, and gradually built up the city of Ilion,¹ a lower spring outside the old walls was used. It was approached by the long flight of steps which now skirts the outside of the tower on its northern side. The whole was ultimately covered up by the immense substructures of the Roman city which arose under Augustus and his successors.

This last transformation of Troy has, unfortunately for the students of its more famous phase and of its earlier civilization, destroyed the inner portions of the Homeric city. For the top of the hill, or acropolis, on which the more important buildings must have been situated, was planed down by the Roman builders to somewhat below the level occupied by the centre of the Sixth city: so that it is only in the lower portions near the walls, which were deeply buried beneath the accumulated débris of centuries that any remains of houses have been found. These lie chiefly towards the east and west ends and consist of the foundations of buildings, which were for the most part single rooms. Two, A and B, which lie close to the walls on the west were halls of the same type as the *megara* found in the second town; in the centre of A was found a considerable layer of ashes, indicating the existence of a hearth. The disappearance of the walls above the foundations here and elsewhere is accounted

¹ Dörpfeld, p. 201.

for by the good quality of the stone which no doubt led to its appropriation by later builders.¹

The adjacent building B was similar in plan but of unusual dimensions, being 39 feet wide. Its length is uncertain, but if it had followed the proportions of A it would have been about 50 feet. The mode in which so large a span was roofed remains a problem. Elsewhere Professor Dörpfeld discusses the possibility of gabled roofs,² but considers it more probable that they were all flat.

These two halls lay on level ground west of the closed gate U. Eastward of that point the ground slopes upward from the town wall, leaving, however, a sunk pathway or road along the inner side of the wall. The buildings on the other side of this road stand, therefore, on a higher level, supported by stone retaining walls varying in height from 7 to nearly 18 feet according to the conformation of the hill. Between some of the houses ramps ascended towards the higher levels or terraces. The building line formed a curve roughly concentric with the town-wall, with its frontage towards the central acropolis. To this plan Dörpfeld attributes the fact that in some cases the ground-plans of the houses are not quite rectangular, but have their sides converging slightly towards the front in order to leave more even spaces for passages between them.

The first of these houses (M) stood on a retaining wall which, at the lower end, was over 15 feet high. The masonry is rather rough, but it shows the peculiar offsets visible in the town wall.³ The plan of the building is more complex than usual. At its east end was a

¹ Dörpfeld, p. 152.

² See Ts. and M., *Introd.*, p. xxix.

³ This peculiarity, which occurs also at the back of the building F, suggests that in these places part of the outer wall of the preceding settlement may have been preserved and incorporated in the houses. See next page.

large room on the floor of which were found several jars (*pithoi*) and household implements. Two smaller chambers formed the south side: as they have no visible doorway they must have been cellars entered from above. On the north lay an open court of uncertain length: between it and another wall (N) were six steps



TROY VI: THE BACK WALL OF A HOUSE (M)
In front of it are the remains of the town wall. (Dörpfeld.)

leading to a higher level. The other buildings at the east end of the town were mostly single rooms, though one of them (G) appears to have the form of a *megaron* with a chamber at the back.

The large hall (F) shows the convergence of the side-walls in a marked degree. The masonry of its retaining wall is rather rough, and an interval in the stone courses shows that it included a horizontal tie-beam of timber

such as is found in the earlier settlements, and in contemporary Cretan work.

The next building (E), which is separated from F only by a crevice, is remarkable for the excellent masonry of its back wall, which, notwithstanding some irregularity in the size and bedding of its material, is very finely jointed and perfectly even on the surface. It is in advance of contemporary Mycenaean work and might be taken, as Dörpfeld remarks, for Greek masonry of the sixth or fifth century B.C. were it not inevitably assignable to the Sixth city.¹ The height of the retaining wall appears to be 9 or 10 feet above the level of the road as excavated, and there appears to be as much below it.²

The remaining foundations on this level are very imperfect: but there appears to have been another platform or terrace about 3 feet higher on which the plan of only one building (C) is at all clear. It has, however, a special interest inasmuch as it is the only structure in which there is any evidence of the use of columns.³ The foundations, which were cut through in the course of Dr. Schliemann's early exploration of the site, are apparently those of a hall or megaron $50\frac{1}{2}$ feet long by $27\frac{3}{4}$ feet wide. On the central axis towards the west is a column-base consisting of a roughly squared stone, on the upper face of which is worked a circular projection, with a conical side-surface about 11 inches high, hollowed at the top to the depth of 4 inches to receive the lower end of a wooden column. The position of this base on the axial line implies that there were two others on the

¹ Dörpfeld, p. 165. It may be due to the prevalence of an Anatolian civilization which is conspicuous in the Hittite regions of Asia Minor and Syria.

² These details are deduced from Dörpfeld's measured drawing and photograph (pp. 167, 168) and his section on plate viii. They seem to support the conclusion that this terrace was in part, at least, based upon the outer wall of the Fifth town.

³ Dörpfeld, p. 171.

same line which have now disappeared. The side walls of this hall were prolonged as *antae* beyond the front wall, and the floor is slightly lower than the ground outside. The occurrence of a central line of columns in a building which is considerably narrower than others in which there are no signs of such supports remains rather puzzling.¹

The first assumption that the building was a temple is now rejected on the ground that separate temples were not known in the Aegean area at the period in question.² But the absence of a central hearth, which the axial line of columns seems to preclude, may have some bearing on its character. Whether the building had only a single doorway opening on the line of columns, or two opposite to the lateral spaces, as in the men's megaron and the state entrance at Phaestos—which seems the more probable arrangement—cannot be determined. This single column-base can only be said to prove that a columnar system, akin to the architectural practice of Crete and Argolis, was not unknown and leaves little doubt that it was a feature of more important buildings which were swept away in the construction of the Roman Ilium.

From the above account it appears that nearly all the buildings, unlike those in contemporary Crete, were single rooms with no common party walls, but separated by narrow passages and a few wider ramps leading upwards to the higher levels of the town. Steps are rarely in evidence, though they can hardly have been

¹ Dörpfeld (p. 154) says that a column-base of limestone was found amongst the rubbish at the west end of the town. It was similar to bases found at Tiryns and Mycenae, but there was nothing to show to what building it belonged.

² The whole Homeric mythology seems to reflect the culture of three or four centuries later, when the Olympian theogony had taken shape.

dispensed with in the steeper portions of the site. It is conceivable that the town was built in concentric terraces rising gradually towards an acropolis. There, it can hardly be doubted, a palace, and other dignified buildings, must have existed, probably in some cases with an upper storey, but of these and the necessary internal staircases no evidence remains.

The destruction of this sixth city seems to have been consummated gradually but very thoroughly—at first by fire and afterwards by the operations of later builders. That so much of the walls remains is due to the fact that the ruins of the lighter upper portions covered the more massive revetments below. The entire destruction of the north side probably took place in 550 B.C., when material from Troy is said to have been used for repairing other towns in the Troad.¹

That the Sixth city had a long existence is shown by the extensive weathering of all the exposed walls, and by the considerable rise in the level of some of the roads. The differences in the masonry of the buildings and of the walls show a continuous process of improvement and reconstruction. The date of its overthrow can only be roughly estimated from internal evidence. The ceramic remains make it clear that it existed during the Late Minoan and Mycenaean period, which is placed between 1500 and 1000 B.C., but it must be noted that Mycenaean imports are found in the Seventh settlement which succeeded it after no great interval. The catastrophe, therefore, may reasonably be placed at about 1184 B.C.,—some two and a half centuries after the destruction of Knossos—the date which is assigned on other grounds to the legendary siege and sack of Troy.²

¹ Strabo (XIII, i, 38) mentions this tradition; but he did not know that the Ilion of his day occupied the site of the Homeric city. See Dörpfeld, pp. 112-3.

² *Ibid.*, p. 182.



TIRYNS : PLAN OF THE CITADEL AND PALACE

- | | |
|----------------------------------|-----------------------------|
| A. Entrance and ramped approach. | F. Gate of Inner Court. |
| B. First gate | G. Principal megaron. |
| C. Outer Court | H. Small Court and megaron. |
| D. Gateway to Palace. | KKK. Chambers in the walls. |
| E. Great Court, | |

CHAPTER XVII

THE GREEK MAINLAND—TIRYNS

MANY fortified sites which existed during the Bronze Age can be identified on the Greek mainland. Conspicuous amongst these are Tiryns, Argos, Mycenae, Sparta, Corinth, Athens, and Goulas or Gla in Boeotia. The last named, though historically of the least importance, is the largest in area: it is supposed by some, probably erroneously, to be the ancient Arne mentioned in the *Iliad* amongst the contributories to the Achæan host.

Some of these—such as Acrocorinthus, towering to nearly 2000 feet above the level of the isthmus, and the precipitous rock of the Athenian Acropolis, and in some degree the Larissa of Argos—were natural fortresses.¹ But a continuous occupation extending to modern times has almost obliterated the vestiges of their earliest inhabitants and left but scanty remains of prehistoric walls and tenements. But at Tiryns and Mycenae this is not the case. After the Dorian invasion they probably underwent a gradual decline, though they still retained some individual importance down to the fifth century B.C. In each case a temple was erected on the ruins of the ancient palace: but their gradual decadence prevented any complete transformation, and when they fell under the hostile attack of Argos, they ceased to

¹ The acropolis of Argos is 960 ft. above the plain; that of Athens is little more than half this height, but it is practically inaccessible except at the west end. Both Corinth and Argos were fortified in medieval times.

exist as towns,¹ and in the course of centuries became partially buried until Dr. Schliemann and Professor Dörpfeld brought to light the visible evidence of their ancient greatness.

In a similar way the isolated rock of Goulas, which was formerly surrounded by the shallow water—now drained away—of Lake Copais, has preserved a circumvallation unusually imposing both in extent and structure, and within it the remains of a Residence and other buildings which seem to have been destroyed soon after their erection in Late Minoan times.

At Tiryns where the citadel stands on a low hill, the natural weakness of its position was counteracted by the immense strength of its walls. Their massive character evoked the astonishment of Pausanias, who considered them no less marvellous than the pyramids of Egypt.² These walls, however, do not represent the earliest settlement on the hill, for excavations made by German explorers before the war showed that there were several earlier levels of occupation extending back at least as far as 2000 B.C. Amongst the discoveries were the remains of a circular building about 46 feet in diameter which may be the earliest palace.³ The latest was probably only a reconstruction of one which immediately preceded it.

The entire circuit of the walls consists of cyclopean

¹ The date of this event is generally given as 468 B.C., but reasons have been alleged for supposing that the subjugation of Tiryns and Mycenae took place before 660 B.C. (see Prof. Mahaffy in "Hermathena" (Dublin Univ.), vol. v, pp. 60 *sq.*, referred to in Schliemann's "Tiryns," p. 35). He supposes that they may have continued to exist as villages until the Persian invasion, when the two towns are recorded to have sent a contingent of 400 men to Plataea (479 B.C.). This view is, however, opposed to the explicit statements of Strabo, Diodorus, and Pausanias.

² Pausanias, ii, 25, and ix, 36.

³ Beneath the earlier palace Dörpfeld found graves, and at a lower level two earlier settlements of a remote date. The circular building is mentioned in a report in the "Times," 18th March 1914.

masonry—huge blocks of stone roughly dressed, and laid with clay mortar in irregular courses. Some of the blocks are more than 10 feet in length, and nearly 5 feet across. Some of them are computed to weigh about twelve tons. The wall itself has a thickness which varies in different parts from 16 to 57 feet; its height, where it is best preserved, is 24 feet (see plan, p. 146).

This stupendous rampart is remarkable for something more than the colossal material of which it is built. At the southern end where the total thickness is nearly 60 feet it includes a covered gallery, on the south side of which are the entrances to five rectangular chambers all within the limits of the wall. The corridor, which is roofed by huge stones laid in roughly horizontal courses and shaped internally to a gabled form, is 24 feet below the level of the hill-top and was approached from above by a stairway roofed in the same manner. The length of the gallery is about 50 feet, with a width of between 5 and 6 feet; it was lighted only by a narrow loophole at the east end splayed internally to the full width. The side-chambers might be called casemates, but it seems probable that they were intended for the storage of provisions and valuables rather than for military purposes. There is a series of five or six similar magazines in the east wall.¹

The west wall at Tiryns also has some peculiarities. At its south end, near the covered gallery, there is an oblong tower divided internally into two equal compartments. The walls are built of massive stone, but the upper portions were originally finished in brick.²

¹ Similar chambers have been found in the prehistoric walls of Carthage and of Thapsus, another Phoenician city in North Africa. See P. and C., vol. iii, p. 351, also Ts. and M., p. 23, and "Tiryns," p. 324: also Beulé, "Fouilles à Carthage" and Daux, "Recherches sur l'origine des emporia phéniciens."

² There is some question as to whether the tower and the southern gallery are not later additions to the original walls. See Dörpfeld in "Ath. Mitt.," vol. xxxii, p. iii.

Further north the rampart projects into a nearly semi-circular bastion, at the foot of which was a small postern door which communicated with the citadel by a long flight of steps.

The hill which these walls surround is in shape a narrow oblong about 330 yards in length and 800 in circuit. It rises in three levels from about 30 feet in height at the north to 60 feet at the south end, where the citadel, including the palace and its precincts, was situated.

The main entrance was on the east side and was approached by a ramp which ascended along the outer face of the wall to an opening (A on plan) which apparently had no actual door. It was guarded, however, on the north by a tower built of huge stone blocks, which is still standing to the height of 23 feet. The road continued on the inner side of the wall and was bounded on the other side by the east wall of the palace. Across the passage thus formed stood the actual gate of the citadel (B), the position of which is marked by two stone door-posts, each of which shows a deep rebate for the door-frame, and a hole about 5 feet above the threshold for the horizontal bar which fastened the doors. This form of approach, which exposed an enemy to attack from both sides as well as from the rear, recalls the walled entrance to the second fortress of Troy,¹ and is found again on a smaller scale at the Lion gate of Mycenae.

The passage was continued beyond the gate until it emerged into a small oblong courtyard (c), on the east side of which was a portico supported by a row of columns indicated by several bases which remain. The floor of this was actually on the wall above the gallery with seven chambers already mentioned. It is supposed to have been closed at the back by a brick wall. On the opposite side of the yard was the great gateway (D) which

¹ See *ante*, p. 17.

gave entrance to the outer court of the palace, and which from its size alone must have formed an imposing architectural feature. It was over 45 feet wide, and while about three times the size of the corresponding gateway in Troy II, it had a general resemblance to it in plan. It consisted of a wall pierced by the aperture of the doorway, with side-walls projecting both in front and in rear and so forming a portico both at the outer and inner side of the actual door. At Tiryns this conventional plan was developed by the addition of two columns on each front. The form and construction of the upper walls and roof is unfortunately irrecoverable, but a tower-like structure may be surmised.¹

This gateway led into the forecourt (E) of the palace at the south side of which was a small columned portico. On the north side was another gateway (F), similar in plan but smaller in size, which formed the entrance of the principal inner court—a quadrangle of 52 by 56 feet. The stone bases that remain indicate that it was bordered on three sides by a colonnade, of which the gateway on the south formed a part. The columns were no doubt of timber, but there is nothing to indicate their exact form. The court was paved with concrete, slightly sloped so that water would run off through a perforated stone at a point on the south side above a vertical drain-shaft. In the centre of the same side is a quadrangular block of masonry with a shallow circular cavity about 4 feet in diameter, supposed to have been a sacrificial altar.

Exactly opposite to this on the north side was the great hall or megaron (G), approached by two steps and a vestibule, fronted like the gateway with two columns *in antis*. In the back wall of this porch three doorways

¹ Beneath this gateway are the foundations of that of an earlier palace. See "Tiryns," p. xii, and Dörpfeld in "Ath. Mitt.," vol. xxxii, p. ii.

led into an antechamber, from which the inner hall was entered by a single opening apparently door-less. Along the side-walls of the vestibule was a skirting of alabaster, ornamented with a pattern of bisected rosettes and spirals crossed by vertical bands of smaller rosettes, an elaboration of a similar design found at Knossos. In this case the ground of the pattern had a filling of a blue vitreous substance which is generally identified with the *kyanos* of Homer. The whole building was a little over 80 feet long and 33 feet wide, and nearly half the area was occupied by the inner hall. The width, therefore, was much the same as that of the great megaron of Troy II, but though there is no evidence as to the character of the roof, there is less difficulty in supposing that it was flat. For in the centre of the inner hall was a large circular hearth, around which still remain the flat bases of four columns which no doubt supported the square framing of an aperture or lantern through which smoke could escape and light be admitted. That this framing would allow of the use of shorter roof beams is obvious from the plan.

A door on the west side of the ante-room opened on to a crooked passage which led to a bathroom. Its floor consists of a huge slab of limestone, estimated to weigh about 20 tons, with a drain in the north-east corner. It had no tank-like aperture, like those private sanctuaries found in Crete, which at one time were mistaken for baths; but it was evidently intended to contain a terracotta bathing tub, as was the case with the bathroom adjoining the Queen's megaron at Knossos.¹ The walls appear to have been lined with wood. From the neighbourhood of this bathroom an intricate series of doors and passages led round the back of the megaron to a smaller hall on the east side (H). Its secluded position, and the fact that there was no direct communication between

¹ *Ante*, p. 74.

the two halls, suggest that it was reserved for women. Like the other, it had in front a paved courtyard, about 60 by 30 feet in area, with a columned portico on the east. It had only a vestibule and an inner hall 20 feet wide, in the centre of which was a square hearth, unaccompanied by any column bases. This hall, like the other, was isolated by a surrounding corridor which separated it on the east from some rooms which were possibly bed-chambers. There are some indications of a staircase leading to an upper storey. On the south-east of the courtyard there is another open quadrangle, and various passages giving access to rooms, the use of which remains uncertain.

Behind the palace buildings, *i.e.*, on their north side, there is an open space at a lower level which was enclosed on its north side by a wall of great thickness, constituting the middle citadel. Excavations here gave evidence of four or five successive occupations. The main entrance was on the east side and was approached from below by the same external ramp and opening in the wall which led to the upper citadel. On the west side it was in communication with the steep stairway which ascended from the postern in the semicircular bastion, and was dominated at the top by a tower above the wall.

The third and least elevated portion of the hill formed the Lower Citadel, the excavation of which has been less complete. The foundations of a wall from east to west with a gate in it were found on the north side of the Middle Citadel.¹ In the walls of this portion are found the peculiar vertical offsets which characterize the contemporary walls of Troy.²

The principal materials used for the inner walls of the palace buildings were limestone, crude brick, timber, clay, and lime in the form of plaster. The hard con-

¹ See "Ath. Mitt.," vol. xxxiii, p. iii.

² *Ante*, p. 136 n.

glomerate known as breccia was used for gateposts and door-sills, and sandstone is found in some few places. The walls were generally of brick based on rubble, with horizontal tiebeams, as was the case at Crete, and were coated with clay rough-cast, finished with lime stucco.

The wooden doors were made to turn on vertical pivots shod with bronze, which fitted into a socket in the sill. One of these bronze caps, which was found remaining in its socket, was a cylinder of an inch and a half in diameter, with a square notch in the side, into which the lower door-rail must have fitted.

The cement lining of the inner walls of the rooms was painted with decorative bands of spirals, rosettes, etc., similar to patterns found at Knossos: and there are fragments of frescoes, especially one of a scene of "bull-grappling," which give convincing evidence of a community of culture with Crete.

This is no less evident in the development of the columnar system in the architecture of all the more important buildings. The frequent use of small porticoes is shown by the number of stone bases which occur.¹ But whilst in all decorative details and technique, and in the ceramic remains which are found, the influence of Cretan art is obvious, the same cannot be said for the ground-plans and general arrangement of their fortified palaces. It is true that at Tiryns more than at any other mainland site, the involved nature of the ground-plan recalls the complexity of Cretan palaces, and suggests that some of the amenities of Minoan social life had gained a footing amid the more military customs and traditions of the mainland communities which lay nearest. But the form of the megaron and the defensive character of the great gateways remained unchanged, adhering closely to the traditional types common to all

¹ There are said to be thirty-one still *in situ* in the upper citadel. See "Tiryns," p. 269.

fortified sites, from which the architectural art of Crete, pursuing a more peaceful evolution on lines of its own, had widely diverged.¹

¹ See Hall, "Aeg. Arch." p. 132, and Noack, "O. and P.," pp. 35 *sq.*



MYCENAE : THE LION GATE

CHAPTER XVIII

MYCENAE : THE WALLS AND THE PALACE

THE site of Mycenae differs considerably from that of Tiryns. Lying among the hills at the head of the alluvial plain in which Tiryns forms, as it were, a low island, the acropolis of Mycenae, though overshadowed by the mass of Mount Elias on the north, rises to a height of about 900 feet above sea-level. The shape of the hill

is roughly triangular, with the longest side towards the north; but the circuit of the wall, which follows the contour of the ground, shows an outline of extreme irregularity, curving outwards on the south-west side, and deeply indented on the south-east, where a considerable landslip appears to have interrupted the otherwise continuous line of wall. The enclosed area (nearly $7\frac{1}{2}$ acres) is about half as large again as that of Tiryns, and in addition there was a lower township stretching away to the south, which, at a much later date, probably in the sixth century B.C., was protected by walls.

Recent excavations by the British School at Athens have thrown much light on the history of Mycenae since the epoch-making discoveries by Dr. Schliemann and the careful investigation of the site by Dr. Tsountas and others.¹ It has become evident that it was inhabited not later than the beginning of the Bronze Age in the third millenium B.C., and that it was a flourishing community, though not yet fortified, soon after 2000 B.C.²

On the south-west declivity of the acropolis hill a cemetery was established, in the upper portion of which the chiefs or princes of the ruling dynasty were buried in those quadrangular pits which are known as shaft-graves. Higher up the hill a palace had been built of somewhat complicated plan by these same dynasts. Whence they had come can only be inferred; but the similarity in style of the valuable contents of the graves with Cretan works of art, and the fact that the palace has points of likeness with Cretan architecture has led to the supposition that they were Cretan invaders who established themselves on the mainland when, towards the end of the Middle Minoan period (c. 1700 B.C.), Crete was at the height of its prosperity and power.

¹ See "The Mycenaean Age," by Dr. Ch. Tsountas and J. I. Manatt, 1897.

² See Dr. A. J. B. Wace's Report in "B.S.A.," vol. xxv.

It may be supposed that in the course of 250 years Mycenae also attained to great power, both on land and sea; and in that case it is more than probable that rivalry arose; and that the mainland branch of the Minoan dynasty invaded the original home of their ancestors, sacked the palaces (*c.* 1400), and for a time acquired the hegemony in the Aegean that Crete had formerly possessed.

However this may be, it is supposed that it was not till after the fall of Knossos that Mycenae was strongly fortified.

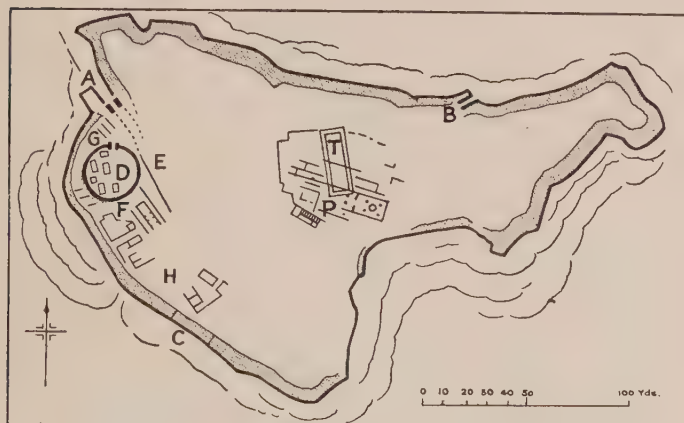
There are indications that there was an early wall which ran from what afterwards became the Lion Gate, and passed by the north-east side of the cemetery, excluding all the graves.¹ The road appears to have ascended in the form of a ramp outside the early wall, and entered it through an opening as at Tiryns. But when the area of the acropolis was extended on the south-west by the strong wall which still exists, it was deflected so that the most important graves—those of a former ruling house—were included within it. A stone circle was afterwards built round a select six of these shaft-graves, leaving a few of less importance outside the circle, but within the acropolis wall.

This wall is not uniform in structure. The oldest and the main portion is Cyclopean in character, though the material is less massive than at Tiryns. In other parts, notably near the Lion Gate, it consists of a core of rough masonry faced on both sides with dressed blocks laid in regularly bonded courses. A still later portion on the south side shows polygonal masonry, in which stones of irregular shape are carefully fitted together. The thickness varies from ten to twenty-five feet, and the height also is far from uniform. This section on the south side is 56 feet high and is known from its structure

¹ Ts. and M., chapter v, p. 113.

as the "polygonal tower," but it is in fact a high retaining wall, built at a late date to support houses on its inner side.¹ There are one or two passages in the walls vaulted in the laminated style of the galleries at Tiryns, but there is nothing to correspond with the side-chambers or casemates existing there.

The most singular feature in the walls of Mycenae is



MYCENAE: THE ACROPOLIS

- | | | |
|--------------------|------------------|-------------------|
| A. Lion Gate. | D. Grave Circle. | P. Palace. |
| B. Postern. | E. Ramp. | T. Later Hellenic |
| C. Polygonal wall. | F, G, H. Houses. | Temple. |

the Lion Gate, which, as it was never completely buried, has been an object of remark to travellers since the days of Pausanias.² It is situated at a re-entering angle near the north-west angle of the Acropolis, and its plan shows an arrangement somewhat similar to that of the eastern

¹ It is supposed to date from shortly before the Argive attack on Mycenae (see Ts. and M., p. 27). There are polygonal sections also at the north-east angle and to the north-west of the Lion Gate.

² Paus., II, 16.

gate of Troy VI, the southern wall being advanced parallel to that on the north, so as to enfilade an attack on both sides. The masonry here is of that more regular character which indicates an intermediate date. The gateway itself is formed by two monolithic side-posts and an enormous lintel-block, all of breccia.¹ The sockets for the pivots of the two-winged doors are still to be seen in the threshold and lintel. The aperture for the doors is about 10 feet 4 inches high, and 9 feet 10 inches wide at the bottom, diminishing to 9 feet at the top. The cross-wall in which the doorway is inserted is built like the side-walls of large blocks of limestone laid in horizontal courses which, above the doorway, are corbelled so as to leave a triangular space over the lintel. This is filled up by a slab of limestone two feet thick on which are carved in relief the celebrated lions from which the gate is named. They stand symmetrically opposed on either side of an altar on which their forelegs are supported. Between them is a small column or *stele*,² with a rounded capital, which supports a kind of impost-block carved in the form of four disks between two horizontal fillets. The faces of the lions which looked outward are now gone; the dowel holes which remain in the stone show that they were not of one piece with the rest of the relief and must have projected beyond its original face. Schliemann conjectured that they may have been made of bronze; others have suggested steatite. The four disks above the capital

¹ The dimensions of the lintel are $15 \times 7 \times 3\frac{1}{2}$ ft.

² The statement often made that this column is enlarged from the base upwards is not supported by a careful examination, though the weathering of its surface makes minute measurement impossible. Prof. Durm has shown by a comparison of photographs that the plaster cast in Berlin, which is copied by Perrot and Chipiez and others, is inaccurate, and is probably responsible for the continued repetition of the error (see "Jhb. d. Oest. Arch. Inst.," vol. x). There is a better cast in the basement of the British Museum.

seem to represent the ends of rods, such as occur on the terra-cotta votive object representing doves on a column



[*B.S.A. An.*

MYCENAE: THE LION PEDIMENT

found at Knossos. Their origin and decorative use in architecture is illustrated by many examples, from the architraves of the rock-hewn tombs of Beni-Hasan on

the Nile to those of Lycia, and their conventional derivative the characteristic dentil of the Ionic order.

The survival of this decorated facade, a unique monument of its period, on the mainland of Greece has a special significance in the history of art, for it has an almost exact counterpart on the front of a rock-tomb at Dimerli, near Ayazin, in Phrygia. The design of two animals—frequently lions—placed like heraldic supporters on either side of a central object occurs both in Phrygian and Hittite reliefs.¹ It is found also on engraved Cretan seals, where sometimes a figure, apparently a deity, appears in the centre. There is no doubt that this *motif* was originally religious, and its widespread prevalence denotes a unity of culture throughout western Asia and the coasts and islands of the Aegean. Whether it originated in the Aegean and was carried to Asia by early emigrants from Thrace, as has been suggested,² or was Asiatic in origin and came to the Aegean with early colonists from Anatolia, which seems the more likely supposition, is a question which cannot be regarded at present as absolutely solved.

So far as the plan of the gateway is concerned, it was nearly square, having side-walls projecting inwards from the gateposts. The uppermost stones of these wings have dowel holes on their surfaces, showing that the chamber was roofed over with horizontal timbers.

In the north wall of the Acropolis, towards the east end, there is another smaller entrance or Postern Gate. Like the Lion Gate it is set within a short passage approximately parallel to the line of the wall. It has a heavy lintel supported on two massive monolithic side-posts, above which is an immense block of conglomerate,

¹ See Garstang, "The Land of the Hittites," p. 60, and "Hellenic Architecture," p. 47.

² See Hall, "N. E.," p. 476.

but the underside of this is so curved that its weight falls only on the vertical posts, and the centre of the lintel is relieved of any downward pressure.¹

A steep road or ramp starting from near the Lion Gate and rising rapidly on the east side of the grave circle in a south-easterly direction turned gradually up the Acropolis hill to the Palace. A large portion of this was totally destroyed by the erection of a Greek temple at a much later date, but the recent work of the British School at Athens has admirably supplemented that of Schliemann and Dr. Tsountas, and probably done all that is now possible to clear up the history of the site. As in the case of the Cretan palaces it is evident that there were two main building periods; that is to say, an earlier palace was replaced by another after a period of perhaps 200 years. Both, however, come within the Late Helladic period,² though no doubt some earlier buildings existed; but in any case, the principal portions that can now be satisfactorily distinguished amid the ruins cannot be placed earlier than 1400 B.C.³

The steep, irregular, and rocky nature of the site necessitated a great deal of levelling by excavation or filling in. There is a general slope from the south-west

¹ "B.S.A.," vol. xxv, p. 15.

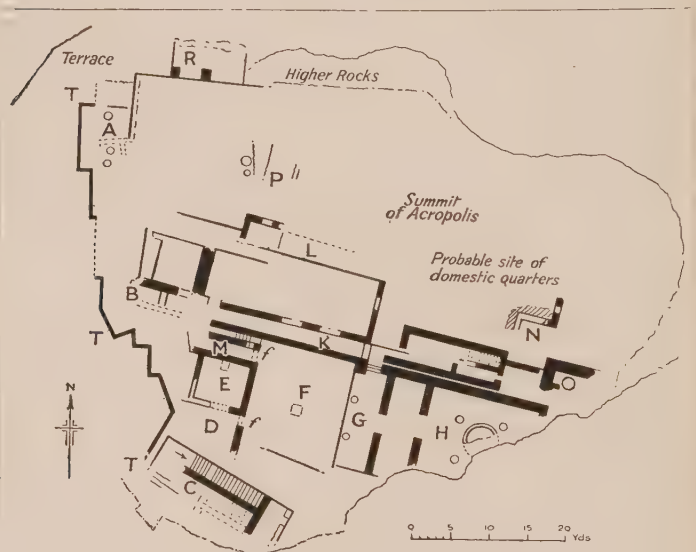
² The earlier culture of the Greek mainland, though largely derived from Crete, is generally distinguished as Helladic. Like the Minoan it is divided into three main periods, each of which is subdivided into three stages. Though the systems are analogous they are not strictly contemporary, the Helladic being in general somewhat later than the Minoan. They may be roughly indicated as follows:

Minoan, early 2800-2100	Helladic, early 2500-2000
„ middle 2100-1600	„ middle 2000-1600
„ late 1600-1200	„ late 1600-1100.

The earlier palace is probably that of the tenants of the shaft-graves, who were, it may be supposed, dispossessed by another dynasty (? Atridae), who rebuilt the palace and were buried in the tholoi.

³ "B.S.A.," vol. xxv, p. 186.

to a culminating point on the north-east, and it is probable that when the first palace was built, the south-west side was terraced by means of a retaining wall which is now represented by TT on the plan.



[B.S.A. An.

MYCENAE: REMAINS OF THE PALACE

A. Probable early entrance.	F. Great Court.	M. West Corridor.
B. West Portal.	G. Portico of Megaron.	N. Bath.
C. Grand entrance.	H. Megaron.	O. Tank (?).
D. Small Court.	K. South Corridor.	P. Shrine.
E. Room of the Throne.	L. North Corridor.	R. Guardroom.
		TTT. Retaining wall.

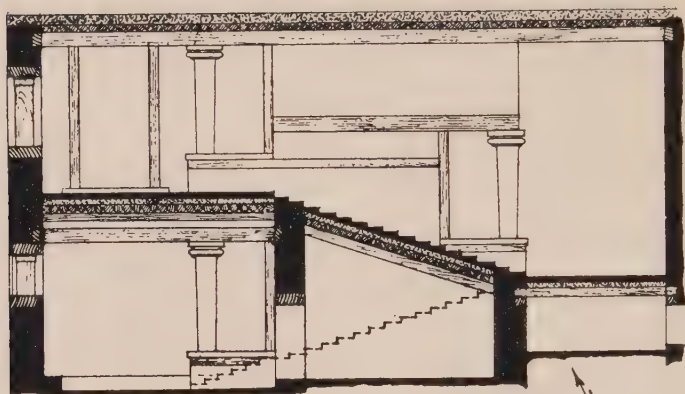
There was an entrance to the precincts of the palace at the north-west angle which seems, from the position of a column base, to have had an outer porch planned in the Cretan fashion with a single column in front (A on plan). Remains of other bases behind seem to indicate

that the other side of the entrance had two columns *in antis* like the large propylaeum at Tiryns. The fact that outside this porch on the west there is a terraced area sloping up from the south, which appears to be the terminus of a road from below, suggests that this was an entrance for horse or mule traffic which, proceeding along a cement-paved road of moderate gradient, could reach the West Portal (B)—the actual entrance to the palace buildings—without encountering any stairs. Outside the north porch, on the east, there is a small building like a guardroom (R), from which it may be inferred that this was at one time the main entrance to the palace.¹

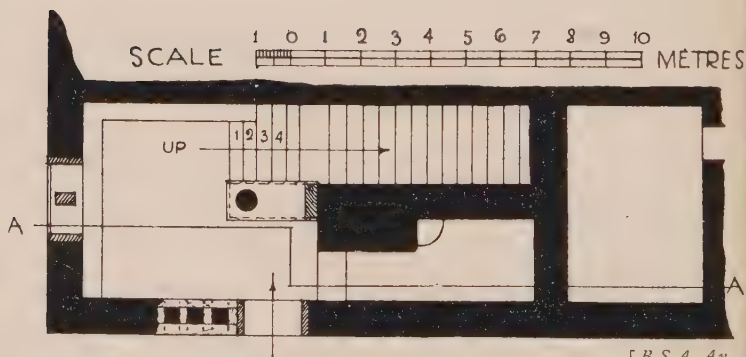
The grand entrance to the ceremonial portion and state apartments of the later palace was at the south-west angle (C). The terrace here is some 17 feet above the surrounding slope, and the entrance therefore consisted of a staircase in two flights ascending by easy steps to the level of the palace floor. It was probably one of the latest additions, though there may have been an earlier set of steps. This entrance was reached from the ramp near the Lion Gate by a road which has been obliterated by later Hellenic buildings, though there are some indications of a gateway half-way up the hill. It probably ended in a zig-zag pathway up to the lobby of the staircase. The lower flight was next to the retaining wall and consists of 22 steps which still remain. The counter-flight of 17 steps has all disappeared, but it must have emerged on an upper landing above the entrance lobby, from which a doorway on the north side gave access to a court of irregular shape, perhaps partially covered. It was paved with cement over crude brick (D).

Below this court there was a basement on the rock, in which was a quadrangular pillar, not, like those found

¹ "B.S.A.," vol. xxv, pp. 212, 266 n.



SECTION A.A.



[B.S.A. An.]

MYCENAE: THE GRAND STAIRCASE, SECTION AND GROUND-PLAN

in Crete, of solid squared stones, but constructed of rubble masonry. As the whole basement was filled up before the destruction of the palace it seems to have been simply a support for the floor of the court.

On the farther side of the court, opposite to the staircase, but not strictly parallel with it,¹ are the remains of a hall nearly 20 feet square with a double entrance marked by two slabs of conglomerate side by side, which formed the thresholds. It was floored with painted stucco, and from a slightly sunk rectangle in the floor against the north wall, which may have marked the position of a chair of state, it is known as the Room of the Throne (E).

A side door on the east of the forecourt, marked by a large conglomerate threshold, led into the south-west corner of the principal open court (F). This was about 38 feet wide, and judged by the extent of the cement paving, was about 50 feet from north to south. It may have extended to the slanting wall of the grand staircase, but there are signs of a south wall at right angles to the sides. The east side is formed by the portico of a megaron which retains the bases of two columns *in antis* (G). A central opening in the back wall of this porch, which had, apparently, been closed by a door, led into a vestibule about 14 feet 9 inches deep. It is paved with coloured stucco, bordered with slabs of gypsum, a material which must have been brought from Crete. Through another opening at the back, which shows no signs of having been fitted with a door, lay the principal apartment, 42 feet 9 inches long (H). Part of this has disappeared by the subsidence of the south-east angle, but from what remains it seems that it closely resembles the type followed at Tiryns. As is the case there, it had a circular central hearth surrounded by

¹ This deviation from parallelism may be due to the stairs having been built against an older retaining wall.

four columns which probably supported the framework of an opening in the roof: whilst it differs from the Cretan halls in having no light-well in the rear and no interior side-doors for communication with adjacent corridors and rooms. The hearth, of which less than half remains, consisted of a moulded ring of stone filled in the centre with earth, covered all over with stucco, decorated on the stepped edge with coloured patterns. A close examination showed that the layer of stucco had been renewed at intervals nine times. The walls of the megaron had been covered with pictorial and decorative frescoes.

On the north side of the court and megaron, and on a higher level, ran a long corridor (κ), at the extreme west end of which was the "West Portal." Before the construction of the Grand Staircase it was probably the main entrance into all the interior portions of the palace. Its plan, as shown by the large conglomerate threshold, which is almost all that remains, was of the simple **H** form, which is the basis of the gate forms at Tiryns. It gave immediate access to the corridor which ran, with a gradual ascent, between the court and other buildings on a higher level, of which only the basements built over the sloping rock now remain. It led originally direct to the more private apartments, and has been named the South Corridor to distinguish it from another parallel passage farther north (now only indistinctly traceable), which is known as the North Corridor (ι).

It is supposed that the walls surrounding the courtyard were at least two storeys in height and followed the rise in the level of the corridor, which, in that case, must have been covered over and lighted by windows on the court,¹ and as the floor of the south corridor rises about $11\frac{1}{2}$ feet to nearly the level of the architrave of the megaron, it is conjectured that there may have been

¹ See restoration in "B.S.A.," vol. xxv, p. 191.

access from it to an upper floor; but the existence of an opening above the hearth of the megaron is rather difficult to reconcile with this view, unless the upper storey was limited to a gallery or loggia over the portico. At the back of the Throne Room there is another short passage, known as the West Corridor (M), which led from the south side of the West Portal directly into the court. A doorway in the north wall of this passage gave access to a staircase in the narrow space between the two corridors, by which the upper floors were reached.

The west end of the south corridor must, at the last, have been very little used, for a wall was built across it in a line with the east side of the court, and the approach to the private apartments must have been through the court and up a short wooden staircase which was connected with the north end of the portico of the megaron.

Amongst the few vestiges of the domestic quarter of the palace are two sides of a bath about 13 feet long inside (N); and at the extreme east end of the site are the remains of a rectangular chamber, with walls three or four feet thick and a stuccoed floor which is conjectured to have been a water-tank (O).

Towards the north-west are some fragmentary remains of what appears to have been a domestic shrine, with portions of two circular altars of painted stucco (P). Many heavy blocks and column-bases of conglomerate scattered about the site indicate the former existence of important Mycenaean buildings which have been destroyed and rendered unrecognizable during the construction of the later greek temple (see plan, p. 159).

The loss of these portions of the palace is regrettable inasmuch as it precludes a satisfactory comparison with the more complete ground-plan at Tiryns. There the number of circular bases still *in situ* shows that the columnar system was considerably developed, whilst at

Mycenae comparatively few have been located. This may be due to the fact that the second palace there was somewhat earlier than that at Tiryns.

On the other hand, Mycenae affords, near the Lion Gate (see plan, p. 174, *post*), some interesting plans of smaller buildings or private houses of a much later date. One, known as the Granary, close to the Lion Gate, and built against the cyclopean wall, has a singular plan, and appears to have been built as a storehouse. There is evidence of its having had an upper floor, which must have been reached by a wooden staircase. Another larger building on the south of the grave circle was the one in which Schliemann found the fragments of a large vase, the decoration on which depicted a troop of six warriors on the march. It has often been illustrated, and has given the name to the house.¹ It has a megaron-like hall and smaller rooms of irregular shape. Adjacent to this is a smaller dwelling known as the "South House." It is described as "a fine specimen of Mycenaean domestic architecture. Its walls still stand to a height of five feet, and show clearly the positions of the wooden ties set in the stone base to support the superstructure of crude brick, and were covered over with one or more coats of clay plaster. The doors and thresholds were of wood. . . . There seems to have been an upper storey, as traces of a staircase were found, and the roofs were flat, for we found innumerable pieces of cement resting on a thickish backing of clay laid over branches of trees laid, in their turn, on rafters set close to one another—some pieces of the clay backing, baked hard by the fire in which the house perished, show most distinct impressions of leaves."² The last of these houses stood close under the supporting wall of the road on the south-east of the circle and is known as the Ramp House. Its

¹ See Schliemann's "Mycenae," p. 133.

² Mr. A. J. B. Wace, "The Times Lit. Suppl.," 19th August 1920.

chief part consists of a megaron of the usual Mycenaean type with small chambers on the west side. Below it are the remains of an earlier building and many fragments of pottery and frescoes. Amongst the latter were found portions of a fresco depicting a bull and male and female athletes and vegetation, all of which recall and seem directly derived from the decorative art of Crete. The date of all these houses must be late in the Helladic period, for shaft-graves have been found below them, proving that the site was part of the ancient cemetery, and was not built over until the royal graves had been segregated within the circle of slabs.



[B.S.A. An.

MYCENAE : THE GRAVE CIRCLE FROM THE NORTH
(The Ramp is seen at the extreme left.)

CHAPTER XIX

MYCENAE—THE SHAFT-GRAVES

THE influence which the developed art of Crete exerted on the later culture of the mainland is as evident in the sepulchral monuments as in the dwellings of the living. The tombs which Schliemann, in his search for the vestiges of Homeric heroes, discovered within the acropolis wall of Mycenae do not differ in type from the pit-graves which had been commonly used in the eastern Mediterranean area from neolithic times.¹ But the fact that some of the bodies had been partially embalmed, the quantity and fine quality of the treasure interred with them, and the character of the accompanying ceramic remains are sufficient to indicate that these shaft-graves were the sepulchres of a ruling dynasty, and that they were contemporary with the earlier palaces at

¹ See *ante*, p. 7.

Tiryns and Mycenae when, in the sixteenth century B.C., Crete had reached the height of its prosperity and power. And when, as is supposed, another dynasty adopted at Mycenae another form of sepulchre, the influence of Cretan culture was still apparent.

How six of these shaft-graves, which seem to have been held for some centuries in especial veneration, were distinguished from the others when the cemetery was disused has already been mentioned,¹ and as their contents have been minutely described in well-known works,² it is unnecessary to do more than refer to such external features of their surroundings as have some historical or architectural interest.

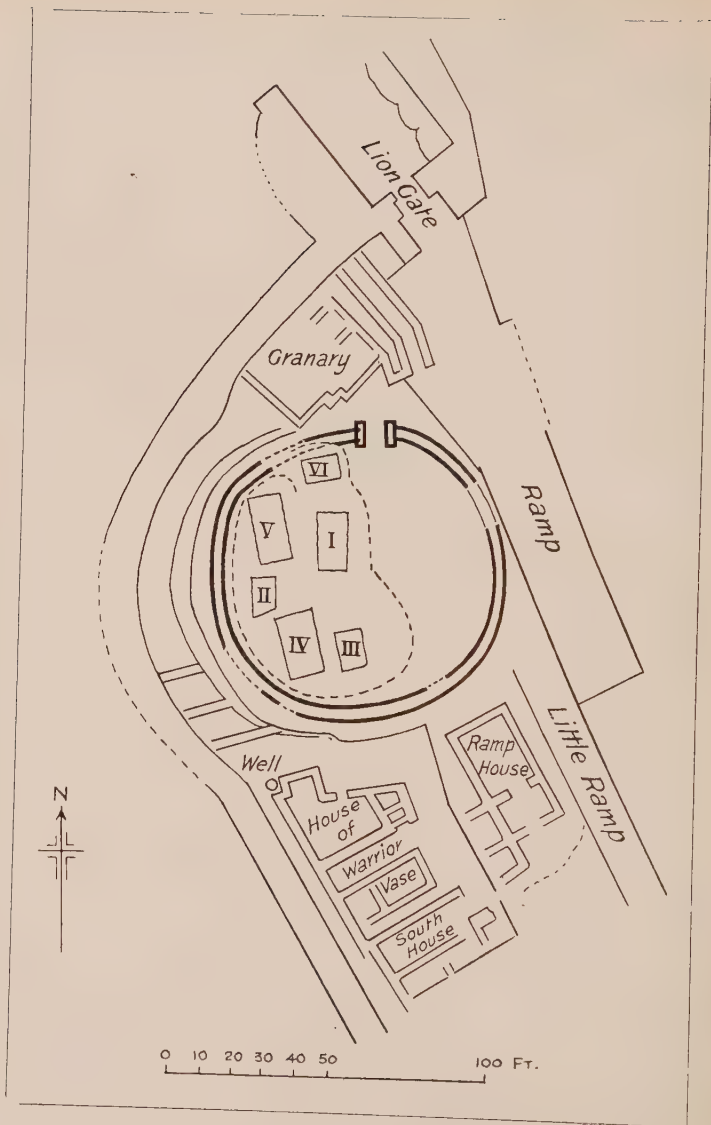
The circular enclosure, or *temenos*, in which the graves lie is a few yards to the south of the Lion Gate, at the western extremity of the Acropolis. The underlying rock here falls rapidly, and a platform, curving outwards, was formed by levelling up the lower side and supporting it by a retaining wall, which had a total height of $18\frac{1}{2}$ feet. The lowest part of the wall is vertical to the height of 5 feet, but the upper part has an inward slope. The graves, which lie towards the west side of the platform, were, therefore, hidden considerably below the new surface. This is not quite level, and has still a slope to the west.³

On the east side there is another revetment supporting the still higher ground on which a rising roadway or ramp led—at first in a southward direction—from the Lion Gate towards the summit of the Acropolis. The

¹ *Ante*, p. 158.

² "Mycenae," by Dr. Schliemann, 1877; "Schliemann's Excavations," by Dr. C. Schuchhardt, 1891; "The Mycenaean Age," by Messrs. Tsountas and Manatt, 1897. The latest conclusions will be found in the B.S.A. report. See *ante*, p. 157.

³ The actual difference in level between the east and west sides of the circle appears from Dr. Schliemann's section to have been five or six feet.



MYCENAE : PLAN OF THE GRAVE CIRCLE

tombs were then surrounded by a double circle of stone slabs set up on edge, the interval of 3 feet between the two lines being kept exact by cross pieces of wood mortised into the upper edges. The empty space between the two lines of stone was filled up with small stones and earth and closed on the top with horizontal slabs, thus forming a low wall of about $4\frac{1}{2}$ feet in thickness. Its height on the north and east was about 3 feet, but on the south and west 5 feet, thus partly compensating for the slight slope of the surface. A few stones in position at the foot of the upright ones seem to indicate that there was a narrow pavement running round the inner side of the circle. An aperture of about 6 feet on the north side, with two short side-walls constructed in the same way, formed an entrance to the circle, which was 87 feet in diameter. Though it was entirely hidden before Schliemann's excavation by an accumulation of earth and débris from 9 to 10 feet deep,¹ he formed the opinion that it was originally a public meeting-place, or *agora*, by which name he always mentions it. But it is now evident that the graves existed before the ring and the terrace upon which it stands were made. For all the graves were excavated in the underlying rock which emerges on the east side of the circle, but is about 15 feet lower on the west. Over the largest (IV), which contained five bodies, and a great quantity of gold ornaments, bronze swords, copper vessels, etc., was found an altar of elliptical plan, constructed of concentric courses of hewn stone, and hollow in the middle. It was probably a sacrificial table, similar to one in the palace

¹ This is sometimes described as a mound (see Ts. and M., p. 85), and the inference drawn that there was a tumulus over the graves; but judging from the section given by Schliemann ("Mycenae," pl. BB) the soil was not so deep in the middle as at the circumference though there was a general slope towards the west (see note on his p. 149). The supposition that there was ever a tumulus may be regarded as erroneous.

court at Tiryns, on which victims—possibly human—were immolated at the funeral ceremonies.¹ The fact that the top of the altar must have been 7 or 8 feet below the floor of the circle makes it evident that the latter was constructed after the altar ceased to be used.²

The graves were originally marked by upright tombstones or stelae, 6 inches thick and about 6 feet high, and with sides converging slightly upwards from an average width of 3 feet 11 inches at the base. Three of these, found lying above grave V, have representations in low relief of a warrior in a chariot contending with an enemy on foot. In one of them there is also a representation of an animal with curved horns pursued by a dog or lion. All of them have curvilinear decorations or spirals in the vacant spaces. A fourth stone has convoluted patterns only with no figures. In one case the spirals are linked together both longitudinally and transversely, a design familiar in Egyptian decorations. The influence of Egypt may also be traced in the attitude of the charioteer with the shoulders fronting whilst the head is in profile, and also in the character of the carving which is of the kind known as *cavo relievo*, where the background is cut away whilst no part of the design appears above the general surface of the stone. In general style the work on these stones has little likeness to any Cretan carving of the Minoan age; but it has a noticeable similarity to early Mesopotamian and Hittite reliefs somewhat modified by Egyptian influence.

Besides four fairly complete stelae about thirty small fragments of others were found; and there appeared to

¹ Human bones, as well as others, were found scattered about the graves, and in some cases were buried in pits in the east half of the enclosure.

² The measurements are taken from Schliemann's accounts, but the entire removal of the earth over the tombs has made it impossible to verify some of them.

have been some which had only a plain surface. There is some evidence that the reliefs were thinly coated with



MYCENAE: A STELE FROM THE GRAVE CIRCLE
(Schliemann.)

stucco, on which the designs were reproduced in colour in the Minoan manner.¹

¹ See Sir A. Evans in the "Times Lit. Suppl.," 15th July 1920.

It is to be noted that these tombstones were not found at the same level as the altar, but were only a little below the presumed floor of the circle.¹

From the data given above the history of this portion of the Mycenaean acropolis may be reconstructed as follows:

There was an early wall which started from the north-west angle of the hill—the Lion Gate being then non-existent—and proceeded in a nearly straight line south-eastward along the upper side of the declivity which was in use as a burial place, and was therefore, as usual, outside the wall. Dr. Tsountas supposes that the lower end of this burial plot was marked off by a curved retaining wall standing vertically 5 feet high, behind which the slope was banked up with earth. This would account for the fact that the second grave penetrates the underlying rock to a depth of only 20 inches, and must therefore have been dug through a superincumbent layer of soil.² Outside the wall was a road from the north which probably turned upward towards the buildings on the acropolis.

In course of time, possibly after a change of dynasty, it was found expedient to fortify the acropolis with a stronger wall. Though the cemetery had by that time been disused and was now superseded by another form

¹ It seems impossible now to ascertain the precise depth at which the stelae were found. Schuchhardt (p. 157) states that they were all at a uniform depth of 4 ft. below the level of the circle, and that they were standing upright. Ts. and M. say (p. 107) that "as we are informed," the stone over grave II was 5 ft. below the level of the ring of slabs and the three over grave V only 20 inches. There may be some confusion between the level of the circle and that of the superincumbent deposit before excavation shown in Schlie-mann's section. In any case it is allowable to suppose that when the circle was formed the stelae were removed from their original positions over the sloping rock surface, and replaced, perhaps not accurately, on the higher level of the newly formed *temenos*.

² Ts. and M., p. 111.

of burial, it may be supposed that as the burial place of former princes it had acquired some sanctity and that the principal tombs, marked by carved stelae, were carefully maintained. It was therefore determined to include them within the new fortification, and with a view to this the low wall below was raised to a height of 18 feet, the new portion being built with an inward inclination so as to form a retaining wall for a nearly level terrace which was formed above the graves: that is to say, the western portion was filled up with earth until it was only a few feet lower than the eastern part where the rock emerged. The double circle of slabs, which has been described,¹ was then formed round the six royal graves; the Lion Gate was constructed at the angle which was made by the projecting addition, and the massive external wall which is still existing was built round the whole acropolis, including a large additional area on the south-west side.²

The theory that the circle was then, or ever, filled by a mound is inconsistent with the existence of the entrance on the north, which was probably closed by wooden gates. But another suggestion that the whole space was covered by a roof supported on wooden columns, as a sort of *heroön* or royal mausoleum, seems more probable.³ If this roof was flat and formed of compressed earth laid over rafters and cross-rods, as was evidently the case in some of the houses, its destruction by fire might account for a peculiar layer of red earth (probably calcined clay) which was observed when the site was first cleared.⁴

¹ *Ante*, p. 173.

² Later investigations by Dr. Tsountas seem to indicate that there has also a small enlargement at the east end of the Acropolis. See "Jbuch. d. deutsch. Arch. Inst.," 1895, p. 143.

³ See Dr. Leaf's *Introd.* to Schuchhardt, p. xxvii.

⁴ Ts. and M., p. 106.

The Dorian invasion would sufficiently account for the destruction of this *heroön*, and for the neglect which led to the gradual covering of the site by sedimentary soil without obliterating the popular traditions which are mentioned by Pausanias.¹ That the circle had already ceased to be frequented or visited ceremonially is evident from the fact that a Mycenaean store-house was built close to, and practically blocking, the entrance.

The supposition that the stelae were seen by Pausanias must, for these reasons, be abandoned,² and the attempt to harmonize his enumeration with the graves in the circle is obviously futile. His hurried summary of the objects to be seen at Mycenae makes it doubtful whether it is based on personal observation, and his ascription of the shaft-graves to the various members of Agamemnon's family is evidently based on the Homeric legend which can only have become current long after the actual date of the tombs. On the other hand, the reference to the tomb of Eurymedon, the charioteer, is striking evidence of the survival of a tradition based on the memory of the three sculptured stones which show a chariot, though when Pausanias wrote (c. A.D. 170) they must have been hidden in the earth for many hundred years.

¹ II, 16.

² Cf. Schuchhardt's "Schliemann," p. 165.

CHAPTER XX

MYCENAE—THE CHAMBER TOMBS AND THOLOI

INTERMENT in a pit or shaft-grave was an elementary form of burial practised from the earliest ages to the present day, but except in the form of a stela, or monument, such a form of grave gave no special opportunity for any ceremonial observance of the memory of the deceased. It may have been an increased tendency for such ceremonies, and a desire to keep in closer association with the departed, which led to a preference for what are known as chamber-tombs, more easily accessible from without, but at the same time protected from illicit interference. These tombs consist, generally, of simple chambers hollowed in the side of a hill, and approached by a horizontal or sloping passage, which, in rocky soil, would need no masonry. In the case of princes or great men more elaborate structures of the same type were called for; and when the use of shaft-graves was discontinued at Mycenae, they took the form of a domical or beehive-shaped cavity of considerable size, beneath rising ground, and approached by an open cutting in the hill-side. The dome is known as a *tholos*, and the approach as a *dromos*.

That this form of tomb was occasionally used in Crete, in much earlier days, has been shown in earlier chapters,¹ and though a rectilinear plan is more frequently met with, especially in northern Crete, the circular form is not uncommon in other parts of the island. It can hardly

¹ See *ante*, p. 27, and chapter vi.

be doubted that this mode of sepulture was part of the general culture which Mycenae owed to Crete, but since the contents of the shaft-graves are equally of Minoan origin, the change in the mode of interment cannot, by itself, be taken, as is sometimes the case, for evidence of a change of dynasty.

The date of these tholoi can only be inferred,¹ but it is obvious that the technique and artistic quality of the few which show any pretensions to decoration differ widely from the sculpture on the stelae above the shaft-graves. Yet the contents of these shaft-graves are thoroughly Minoan in style, and in close accordance with the ornamentation on the façade of the Treasury of Atreus. It seems plain, therefore, that there was no break in the Minoan culture of Mycenae, though the closing of the shaft-graves indicates that some ancient funerary customs were considerably modified. It also seems possible that at a somewhat later date the fortification of the acropolis and the rebuilding of the palace may have been due to a political change which must have taken place some centuries before the general catastrophe of the Dorian invasion.

The nine tholoi at Mycenae, which are all outside the Acropolis, besides one at the Heraion near Argos, show a considerable difference in their technical quality, though they were all constructed in the same principle. The process seems to have been to make a large circular excavation from above, and to meet this with a horizontal cutting in the hill-side. At the place where they met a dome-shaped lining was built up in the manner described on p. 27, and the cupola was then covered again with earth; the only entrance being by a doorway

¹ Sir A. Evans says: "The first construction of this beehive type of sepulchre at Mycenae is coeval with the date of the earliest contents of the shaft-graves, and comes within the limits of the Middle Minoan age" ("J.H.S.," vol. xlv, p. 45).

and short tunnel, or passage, where the dromos actually entered the hill. Inside the dome the edges of the vaulting courses were chamfered off so that the interior presented a perfectly smooth surface.

The less important tholoi have plain doorways consisting of monolithic side-posts crossed on the top by heavy lintel blocks which have no relieving space above. There was no attempt at carved decoration and no attached door, the aperture being blocked up with masonry soon after the burial. A large tomb near the Lion Gate is one of the few which show signs of having been fitted with an actual door. There are indications in some that the dromos was filled up with earth and a wall built across its outer end, but in such a manner that part of it could be taken down and replaced without much disturbance to the whole, in case the sepulchre was used for another interment.

The most important group includes two which have long been known as the Treasury of Atreus and the Tomb of Clytemnestra, and another which, though seemingly of less importance, is supposed to be the latest of all in date. It is called the Tomb of the Genii, from the subject of two small plaques which were found within it. Like the Atreus tomb it has the vault still complete, all the others being more or less broken down.

The Treasury of Atreus has been so often and so minutely described¹ that it is unnecessary to do so in detail. The dimensions, for such a building, are large, the diameter of the dome at the floor being 48 feet and its height to the apex the same. It is singular amongst these tombs at Mycenae in having a rectangular side-chamber on the north side, entered by a doorway which, like that from the dromos, had a relieving triangle over the lintel, no doubt once filled with a carved tympanum. The side-chamber was probably once lined with decorated stucco,

¹ See especially Ts. and M., pp. 117 *sq.*

and in the centre of its floor was the sunk footing of a wooden post which must have supported a stone ceiling.



[*B.S.A. An.*

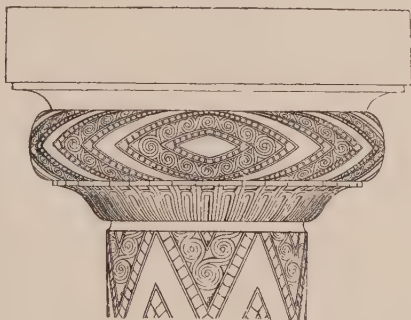
MYCENAE : THE TREASURY OF ATREUS

showing the bases of the pilasters, the remains of which may
be seen in the British Museum.

The entrance from the dromos had originally a slender pilaster of semicircular section on each side, about 18 feet high, very slightly enlarged upwards, which was

probably a symptom of a fading Minoan tradition. The surface of each pilaster, together with the capital, was decorated all over with an elegant pattern of chevrons enriched by spirals. Of these, only the square flat bases remain *in situ*, but fragments which still exist allow of a successful reproduction of the whole design (see frontispiece). The vacant triangular space above the doorway had been filled with red porphyry in horizontal bands, incised with spirals, of which also some few portions have been preserved.

The shape of the cushion-like capitals is interesting inasmuch as it forms a transition between that of the Minoan columns as shown in Cretan frescoes and that of the incipient Doric of early Hellenic art. There had evidently been some amount of attached bronze-work upon the architrave of the



MYCENAE: RESTORED CAPITAL, TREASURY
OF ATREUS
(Puchstein, "Das Ionische Kapitell.")

door. The interior of the dome, which must have had a polished surface, appears to have been decorated with bronze rosettes or other ornaments in horizontal rows of which, however, only some of the rivets remain between the stone courses. From all the indications which still exist it is evident that this tomb must have been an architectural monument of great beauty and refinement, having, for all who entered its dimly lit interior, an impressive solemnity which is hardly less felt even in its present dismantled state.

The other tomb, which shows the remains of some

architectural decoration, is that assigned by Dr. Schliemann to Clytemnestra. Here were found the remains of two pilasters semicircular in section and decorated only with fluting in the manner of the later Doric columns.¹ It also had a vacant triangle above the lintel which had been filled with decorative slabs of red marble, beneath which was a projecting moulding over a line of disks in low relief.² The dromos of this tomb had a wall closing its outer end, constructed in three sections, of which the central one coincided with the width of the dromos. The latest of these last three tombs retained its cupola complete: it was, however, much smaller. These three are supposed, from the masonry, to be of about the same date as the Lion Gate when Mycenae must have been nearing the culmination of its power and prosperity.

The only tomb of this particular kind which can be supposed to have rivalled the Treasury of Atreus was that at Orchomenos, on the west side of Lake Copais, in Boeotia. It is mentioned by Pausanias as the Treasury of Minyas, and was regarded by him as not less wonderful than the pyramids of Egypt.³ It was constructed of white marble, and its dimensions were nearly the same as those of the Mycenaean tholos. The additional fact that it is the only other tomb of the kind which has a side-chamber allows of the assumption that its design was influenced by it. The ceiling of this side-chamber has long been an object of admiration. It consisted of slabs of green stone, 16 inches thick, beautifully decor-

¹ Prof. Durm throws some doubt on the shape of the whole pilaster. See article cited *ante*, p. 160.

² Ts. and M., p. 123.

³ See Pausanias, ix, 36. A possible relation between Minyas and Minos is discussed by Mr. H. R. Hall, "N. E.," p. 60. The remark of Pausanias, "the topmost stone, they say, holds the whole building together," seems to imply that he thought it was vaulted on the radiating principle of the arch, which can hardly have been known to the Minyans.

ated on the visible side with an Egyptian pattern of linked spirals and lotus-flowers bordered by rosettes. This ceiling fell in recent times; and its having remained *in situ* so long may be due to the fact that the walls of the chamber were carried up some distance above it, leaving a vacant space with an upper ceiling which relieved the pressure from above. The dome itself seems to have had numerous decorations in bronze, but it is now reduced to a dilapidated dark grey ruin, with walls no higher than the lintel of the doorway. The dromos also has been destroyed by the abstraction of the stones for use in a modern building.

The tradition, handed down by Pausanias, that these tombs were treasuries, was no doubt due to the great value of the objects found in some. It persisted down to modern times, and was adopted by Schliemann, notwithstanding the fact that that ascribed to Atreus was locally known as the tomb of Agamemnon.

It may have given rise to the erroneous supposition that the tholoi were earlier than the shaft-graves. Unfortunately, the treasures found in some must have led to their being rifled indiscriminately in ancient times, for this has happened with very few exceptions. The most important is a small example discovered by Dr. Tsountas in 1889 at Vapheio (Amyclae), near Sparta, which has been named the tomb of Cassandra. In it he found, amongst other interesting objects, the two now famous gold cups, the sides of which are covered with repoussé work representing bull-catching and taming, unmistakably indicating a Cretan origin or inspiration.¹

¹ Facsimiles of these may be seen in the British Museum. One scene curiously illustrates the metaphor in Isaiah, li, 20, "as a wild bull in a net" (though the revised version says "antelope"). A beehive tomb at Menidi in Attica was found apparently intact, and contained many trinkets, and a few occur elsewhere. See Ts. and M., pp. 131, 145.

That this form of tomb was reserved for members of royal or noble families is evident from their comparative scarcity. Between twenty and thirty altogether have been recorded in various parts of Greece.¹ The fact that two have been found in Thessaly, as far north as Mount Ossa, and one in the island of Kephallenia, on the western coast, shows the wide prevalence of this Aegean culture which, in some cases, may be attributable to direct Cretan influence rather than to that of its Mycenaean offshoot.

¹ In 1907 Prof. Dörpfeld discovered the remains of three near the ancient Pylos in Triphylia, the reputed home of Nestor. One was apparently a royal sepulchre which had contained many treasures, amongst them, no doubt, the gold signet on which Sir A. Evans based his treatise "The Ring of Nestor" ("J.H.S.," vol. xlv).



J.W.

GOULAS: EXTERIOR OF WALL SHOWING OFFSETS
(De Ridder, "B.C.H.")

CHAPTER XXI

GOULAS OR GLA

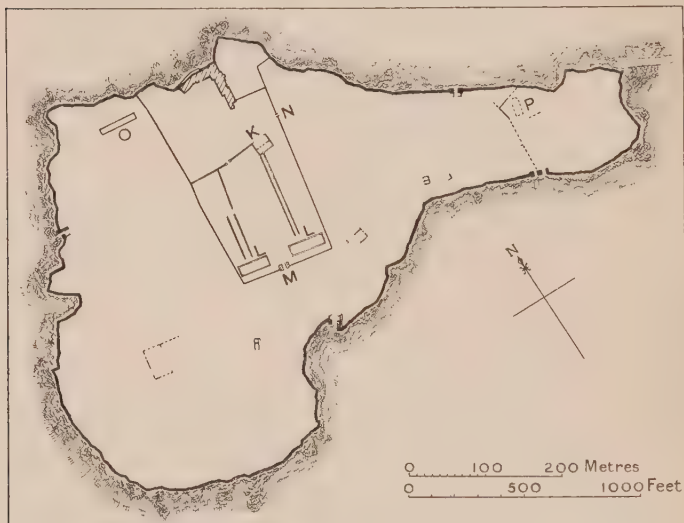
THE largest fortified site in Greece which still retains imposing remains of an ancient rampart and contemporary buildings dating from the Mycenaean age, is that known as Goulas, Gha, or Gla, in Boeotia. Though unnoticed by Pausanias, who visited the neighbouring Orchomenos, the extent and massive structure of its walls, which are almost as remarkable as those of Tiryns, entitle it to attention in any account of Mycenaean architecture.¹

The site consists of an isolated rock, roughly triangular in plan, which rises abruptly from the eastern end of what was formerly the large but shallow Lake Copais. Its height above the present level of the plain is about 237 feet on the north-west, where the face is very steep. Thence it slopes very unevenly towards the south, where

¹ This account is taken largely from Ts. and M., Appendix B, with some modification.

the height is about 123 feet,¹ and to the east end, where it is still less, and is connected with the ancient mainland by a natural sloping causeway.

A stone wall was built close to the edge of the rock following all its irregularities, and the area enclosed is



THE ROCK OF GOULAS

about 200,000 square metres, or very nearly $49\frac{1}{2}$ acres, and nearly seven times that of the acropolis of Mycenae.

The wall is constructed of massive stones laid in uneven courses in the manner known as Cyclopean, the largest block being 7 feet long by 3 feet high. It is

¹ These measurements are taken from Noack's account in "Ath. Mitt.," vol. xix, who gives the height of the palace floor as 72.44 metres. The 30 m. given by de Ridder ("B.C.H.," 1894) is apparently an under-estimate.

nearly 19 feet in thickness, and though only the lowest courses, remain on the inside, the outer face, owing to the abrupt slope of the rock, is sometimes 10 feet high. The irregularity of the cliff-edge involved its being built with an indented outline, and multitudinous salient angles show the peculiar vertical offsets which are noticeable in the walls of Troy VI, and in parts of those at Tiryns. In this case they are more prominent but not sufficiently so as to suggest any military object.¹

There are four gates or openings in the walls, one on the north, another at the centre of the west side, and two in the incurved length of the south-east side. The



SOUTH GATE



NORTH GATE

more southerly of these two was probably the principal entrance. It is in a re-entering angle of the rampart, the wall on the east overlapping that on the west, thus giving an oblique approach like the Lion Gate at Mycenae or the East Gate at Troy VI. The width of the passage is about $17\frac{1}{2}$ feet, and there was a high tower-like wall at each side of the entrance. There are no indications of an outer gate, but the inner court (36 by $23\frac{1}{2}$ feet) must have been defended by strong wooden doors,

¹ They occur at intervals about 6 to 12 yards apart, and are mostly about 1 ft. deep, though some are less, and others as much as 2 ft. They nearly always show straight joints, though in a few cases there is a very short bond (see "Ath. Mitt.," vol. xix, p. 426). Noack observes that the destruction of the walls is due rather to natural causes than to abstraction of the material for building, as the displaced blocks are still lying about (*ibid.*, p. 424).

in much the same manner as at the entrance of the citadel at Tiryns. Access was, moreover, impeded by the steep and narrow approach up the cliff side.

The north gate, which was slightly wider, and which was approached by an easy gradient, was protected by two towers, and here also are the remains of an inner courtyard about $27\frac{1}{2}$ feet wide by $17\frac{1}{2}$ deep.

The two other gates were apparently of less importance, and had rather the character of posterns, but that



SOUTH-EAST GATE



WEST GATE

near the east end of the island is peculiar in being bisected by a central pillar, an arrangement which is very seldom met with in the mainland architecture of the period.¹ Noack is of opinion that it formed two separate gates, the central pier being the termination of a wall which

crossed the island at this narrow part, and divided the area of the fortress into two.² It is a curious fact that the ramp which led up the low cliff at the east end of the island led to no gate or defensive work. It is possible

that it existed before the place was fortified, and had led to the building of a wall at this end. The remains of the "palace" or official residence present interesting differences in plan from analogous

¹ De Ridder, *loc. cit.*, p. 275, considered it unique.

² "Ath. Mitt.," vol. xix, p. 423. It might be supposed that this centrally-divided entrance was derived from the characteristic portals of Crete, but in that case a column rather than a stone pillar would have been expected. Noack's suggestion may therefore be a possibility. It is the only one of the gates which has no definite indications of an interior court.

buildings of the same period. Though its complexity suggests Cretan influence the absence of any central court and of any indication of free-standing columns differentiates it widely from either Cretan or Mycenaean palace architecture. It was, in fact, a strongly built, self-contained dwelling-house of two wings of about the same size, one wing being based partly on the north wall of the island, whilst the other projected southwards at a right angle from its eastern end. The facts that there was only one entrance and that the external walls were extremely thick,¹ support the view that the site had mainly a military character. At each extremity a massive quadrangular tower, with no visible communication with the rest of the building, which might have been a prison, gives the same impression.² That on the north was apparently an addition, for though its floor was 13 feet below the surface, it was built against a thick terminal wall at the west end of the house without an independent side-wall. Where it was not based upon the rampart the area was divided into a central space with a corridor on both the west and south sides.

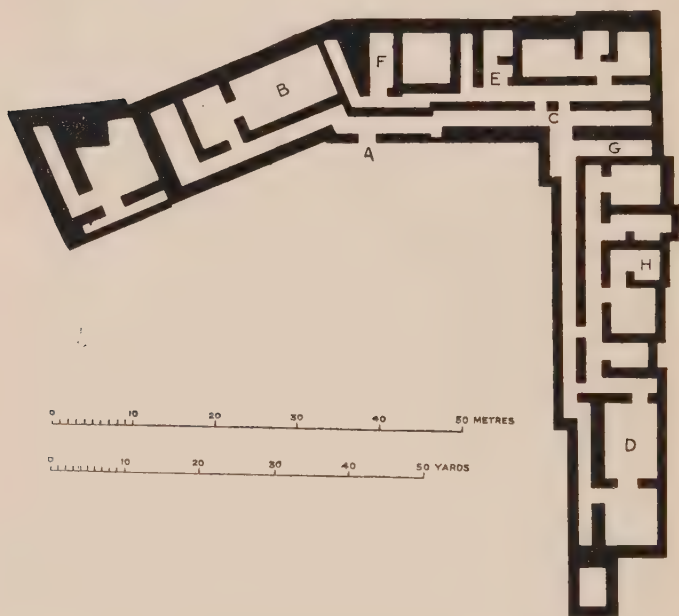
The other tower, which was much smaller, had a separate wall where it abutted on the main building. Its floor was about $3\frac{1}{2}$ feet below the ground level.

The plan of the interior of this residence was very peculiar. The only entrance was by a door (A), near the centre of the north wing. Immediately on the left of this a corridor led to the largest room, and as the building here followed a deflexion of the rampart, its axis

¹ The front walls were about 4 ft. thick; at the back on the north side they were mostly about 6 ft.

² In this respect they may be compared with the towers of Troy VI which appear to have been only accessible from above, see *ante*, p. 138. The disused basements of the early palace at Knossos are not very dissimilar (p. 33). De Ridder supposes that they may have been look-out towers to detect the approach of enemies ("B.C.H.," 1894, vol. xviii, p. 282 *n.*).

deviated slightly to the south-west. This megaron (B) was divided into an ante-room at the west end, and a larger inner hall, about 37 feet long, and having no external columned portico, was only entered by a



GOULAS : PLAN OF THE RESIDENCE

lateral door in the ante-room. It had no communication with the more eastern portions of the building, except by the corridor, which was continued eastward along the entire front. At the eastern angle a double doorway (c) gave entrance to another parallel corridor, from which a number of smaller rooms were entered.

At the angle where the two wings met the outer

corridor was continued southward, and an arrangement similar to that of the north wing was repeated—that is to say, there was an inner parallel corridor from which the various rooms were entered. Beyond these was a megaron (D) with a fore-hall and side-door which completed the internal ground-plan. It will be thus seen that the building was, in fact, duplex, though it was unified by the existence of only one external entrance. The chief difference between the two wings was that the southern megaron, having a second door at the farther end of the inner hall, was not cut off from the other rooms. Its remoteness from the only entrance of the building may account for this; and the whole plan may be regarded as an interesting illustration of late Mycenaean architecture retaining all the defensive features which military requirements dictated, but modified where possible by a tendency towards the more complex character of the Cretan plan.

The internal walls seem to have been generally about 3 feet 3 inches in thickness, and were covered with a coating of roughcast or stucco. The numerous doorways, of which there were about thirty between rooms and corridors, or across the latter, were in every case provided with a door-sill, consisting of a slab of bluish conglomerate averaging about 6 inches in thickness. The size of these sills was not uniform, but each had a raised band about 2 inches high worked on the upper surface for the door to close against, the rest of the slab being covered by the plaster flooring and the ends of the door-frame. Holes in the sills and several bronze caps which were found in the eastern wing show that the doors turned on bronze-shod pivots, as was the case elsewhere. A good deal of lead was found in the shape of small plates, 8 to 12 inches in width, and $\frac{1}{5}$ inch in thickness. From their position near the sills it is evident that they were parts of L brackets used to attach the

door-frames to the walls. Traces of iron were found in one.¹

The use of the various rooms is a matter of conjecture, and the few indications of decoration do not throw any light upon it. Except in one small room (E), where the outer division was paved with stone, the floors were all of plaster. In one room (F) the floor had traces of colour, and only in these last two are there any remains of coloured decoration on the walls. In the two megara and the two north corridors, and in most of the rooms in the eastern wing were found numerous fragments of a white and very friable stucco, which appeared from their shape to be the remains of pilaster-strips which had fallen from the walls. In one room (H) these had been little more than shallow vertical bands, slightly over 2 feet wide, arranged at regular intervals; more frequently they appeared to represent engaged columns showing about one-third of a cylinder, or merely flat pilasters with rounded edges. Some found in the inner north corridor seem to have occupied a salient angle and had two faces channelled and two plain.

In two narrow rooms, F and G, the door-sill had a small slanting aperture which was apparently a drain, and is supposed by de Ridder to have communicated with outlets on the north side of the building. It seems probable that the narrow spaces may have been left unroofed for the purpose of ventilation or of supplying light to the corridors. The possibility of some having contained wooden stairs leading to an upper storey may be considered, but there appears to be an entire absence of evidence of this. It is evident that there was no developed system of drainage. Two other larger channels unconnected with those mentioned passed under the front wall, and communicated with circular pits outside

¹ There is no other evidence that iron was in common use. See de Ridder, "B.C.H.," vol. xviii, p. 294.

the building, which may have been receptacles for rain-water, but otherwise the method of obtaining water remains altogether obscure.

There were a few other buildings on the island, but no indications of anything like a street or the contiguous dwellings of a civil community. In the central space, south of the Residence, where the ground falls rather rapidly towards the principal gate of the rampart, there was a large rectangular enclosure sunk slightly below the general surface, with the foundations of two parallel straight walls, on both the east and west sides. At the north end of the east double wall (see plan, p. 190) was a building (K), about 72 by 60 feet, divided longitudinally from east to west by a wall, and at the south end of each is a narrow transverse building (L, L) with a space of about 100 feet separating the opposite ends. Noack, who assumes that the site is that of the ancient town of Arne, mentioned by Homer,¹ regards the space thus enclosed as the public square, or *agora*: but supposing, on the other hand, that the place was mainly a military post or fortress, as de Ridder is disposed to think, it seems probable that the buildings may have been barracks for a garrison.

This central space was further enclosed by a wall on the south about 136 yards long, from the extremities of which two side-walls can be traced as far as the rampart on the north of the island, and on the east and west sides of the Residence, which was thus included in a kind of citadel. The principal entrance was in the south wall (M), between the two long rectangular buildings, and formed a sort of propylaeum, through which a road led in an almost direct line from the great gate of the rampart on the south to the door of the Residence on the north. There was a small side gate also in the eastern wall (N).

It is scarcely possible to assign any definite purpose

¹ Iliad, ii, 507.

to the remains of other buildings as at o and p. The latter appears to have had an apsidal termination added perhaps to serve the purposes of a Christian church.

A few fragments of earthenware which were found show, in form, some affinity to Mycenaean productions of a late date with local peculiarities of colouring. The use of lead in constructive work with some indications of iron also points to a comparatively late Mycenaean date. The evidence of acquaintance with columnar architecture on the walls of interior halls and corridors, though the defensive character of the building precluded the use of free-standing columns, indicates that the whole island was essentially a military settlement in which decorative architecture had no place. Moreover, the paucity of objects of household use suggests that it could not have been occupied for long: whilst signs of its destruction by fire justify the assumption that its ruin was due to the same irruption from the north under which the wealthy Minyan rulers of Orchomenos fell.¹

¹ The identification of Goulas with the Arne mentioned in the second book of the Iliad (l. 507) remains very problematical. Homer's epithet, *πολυστάφυλος* (rich in grapes), is no more applicable to this bare and barren rock than is the statement of Strabo (I, iii, 18) that Arne was buried beneath the waters of the lake. Cf. de Ridder, *loc. cit.*, pp. 408-9.

CHAPTER XXII

SUMMARY

THE architecture, of which the fragmentary and sometimes indistinct traces have formed the subject of the foregoing pages, shows—no less strikingly than the faience, metal work, carving, and smaller art in general—the high degree of culture to which the population of the eastern Mediterranean had arrived in the second millenium B.C. That its principal focus was the island of Crete—though hardly suspected before—has only become known to the world in general since the beginning of the present century, chiefly through the enterprise of Sir Arthur Evans, and those who have followed his lead.

The origin of the Cretans and of the ultimate sources of their civilization have thereby become the subject of much discussion, and all theories respecting it still remain somewhat speculative. So far as this volume is concerned, it has been assumed as a highly probable fact that the earliest population migrated from the south-west coasts of Asia Minor, and brought with them certain primitive ideas on religion which continued to be reflected in the art and habits of the race, though not without an infusion of new ideas derived from traffic with neighbouring lands and people. The only indisputable fact is that in Crete and some other islands there is visible evidence of a continuous evolution of social life from a time when the use of metals was still unknown to a period when a peculiar and highly developed civilization prevailed and lasted throughout what is

known as the Age of Bronze. Whilst substantially different from the contemporary civilization of Egypt, it can hardly be said to be inferior to it: and though it is evident that, like the rest of the Aegean area, it felt the powerful influence of Egypt, and that there was a continuous mutual commerce, the culture of Crete proved to have more real vitality and a greater capacity of development.¹ It spread rapidly to the neighbouring coasts and islands and to a large extent penetrated the mainland of Greece. To such an extent was this the case that though Crete, by some unexplained catastrophe, lost its pre-eminent position, and its hegemony passed to Mycenae, its art retained its vigour on the mainland: and even when the irruption of a more northern race destroyed the Mycenaean dominion, and for a time almost obliterated the material evidence of its older culture, its spirit still survived and became ultimately one of the main sources of the brilliant art of Hellenic Greece.

The student of historical architecture, whose chief interest in this Aegean civilization lies in what remains of the dwellings of the living and the sepulchres of the dead, finds for his information little more than ground-plans, and fragmentary evidence of the construction and decoration of external and internal walls. Of the elevations of the palace-buildings it is impossible to form any exact idea, for it still remains doubtful whether gabled roofs were ever used. But some evidence of the appearance of private houses is obtained from the tiles which show pictures of buildings in two or three storeys,

¹ The evidence of the relations of Aegean and Egyptian art will be found summarized by Mr. H. R. Hall in the "Journal of Egyptian Archaeology," vol. i, pp. 202-3. That Egyptian art was the greater of the two so far as architecture and sculpture are concerned cannot be denied, and in those respects it had an important part in the formation of classic art. See "Hellenic Architecture," pp. 73, 177.

which have a curious resemblance in proportions and fenestration to Egyptian houses of a similar class.¹

An important fact in the history of this Aegean architecture, and one which differentiates it from that of Egypt, is that there are no distinct religious buildings, and no definite evidence of what may be called public worship, except in so far as it may be indicated by ceremonial possessions or spectacular performances. It must be assumed that the king himself had a semi-divine character; and it is evident that the palaces, or at least certain portions of them, were set apart for the purpose of religious observance. Moreover, there are hypaethral shrines, roughly built, or caverns amongst the hills, which had some traditional sanctity and were frequented for religious purposes. To this custom there is a parallel in Hittite lands, where sylvan shrines, or grottoes, and "high places" are not infrequent, and where the distinction between palaces and temples is still a matter of doubt.²

A characteristic element in the great Cretan palaces was a central court round which many buildings assigned to ceremonial or domestic purposes were compactly grouped, with numerous corridors and side entrances. In this they have some resemblance to Mesopotamian and Assyrian palaces, and it seems allowable to regard this as evidence of early racial associations with Asia. The Oval House at Chamaizi shows that the same kind of plan, with a central courtyard, was not confined to the palaces.

Another feature of the larger architecture of Crete was the rapid development of the use of columns as

¹ See "Arch. of Anc. Egypt," pp. 75, 85. These houses are of the XVIIIth dynasty (*c.* 1500 B.C.), whereas the Cretan tiles are assigned to the Middle Minoan period (*c.* 1750 B.C.).

² *Cf.* "Hellenic Arch.," p. 58, and "Arch. of W. Asia," pp. 70 *sq.*

decorative supports. These were always of tree-trunks, though rectangular stone piers were used for constructive purposes. The column shafts have, of course, disappeared and are only indicated by their stone bases. As this is a feature very rare in Mesopotamia¹ but common in Egypt, it may be supposed that the use of columns was derived from the latter, and such evidence as there is of their forms lends some colour to this view.

But though the Cretans borrowed ideas from abroad they adapted them to their own purposes in a manner which shows their originality and independence in all branches of art. This is nowhere more evident than in the ground-plans of the principal dwelling-room or megaron. A large hall, and sometimes more than one, was an indispensable adjunct to both the domestic and ceremonial portions of Aegean palaces. In its simplest form as it is found in Troy II, it consisted of a rectangular hall the length of which was apparently about twice its breadth, the only entrance being through a fore-hall or vestibule which faced the open court in front. The fact that a fixed hearth is generally found in the centre indicates a northern origin, which seems to be corroborated by the existence in north Germany of prehistoric timber-built structures of the same type.² That it appears in Troy seven or eight centuries before it is found, with some elaborated details, in the Argive palaces of Mycenae and Tiryns, seems only capable of explanation by the fact that it had also existed in a

¹ It is a remarkable fact that recent excavations have shown that at Kish, near Babylon, cylindrical brick columns 5 ft. in diameter were used in the third millenium B.C. A row of four appear as central supports in a large hall ("Times," 14 January 1925). The use of wooden columns has also been verified at Ur, and others of hardened clay formed decorative features at doorways. But, so far, the evidence of their being used constructively in Mesopotamia is very scanty.

² See "Hellenic Arch.," pp. 5, 6.

timber form in the Danubian area and was translated into stone or brick by Thracian tribes, by whom it was taken into Asia Minor, and at the same time by some southward migration introduced into Peloponnesus.

This form of megaron was originally constructed as an isolated building sharing its walls with no contiguous rooms or corridors, and with no entrance or exit but that in front. It is always found in fortified sites where each building may be supposed to have been constructed with a view to security: and this may explain its occurrence in the walled town of Phylakopi in the island of Melos, which, notwithstanding its early participation in Minoan culture, was more exposed to attack than the larger and more powerful island.

For in Crete the megaron assumed a very different form, which is partly ascribable to the common use of upper storeys. In the early halls of the mainland light and air were obtained not only through the entrance, but also through an overhead aperture which was necessary in winter for the escape of smoke from the hearth. But the addition of an upper floor, whilst it abolished this top-light and necessitated a light-well at the back, also required the provision of a staircase which, by being placed in the space between two adjacent buildings, led to a general unification of the ground-plan. The hall thus became part and parcel of a complex of rooms and passages, and was placed in communication with them by side-doors, corridors, and stairs. The Cretan architect thus learnt to design a large building as a whole and with some amount of method. Noack has pointed out¹ how, at both Knossos and Phaestos, there are

¹ "Homerische Paläste," § 1. Noack's general argument in this essay that the palaces described in the *Odyssey* represent a simpler and at the same time a later phase of architecture is by no means generally accepted. Prof. Dörpfeld, in his recent work, "*Homers Odyssee*" (vol. i, pp. 289 *sq.*), sees in Homer's description two forms

certain lines of masonry traceable both longitudinally and transversely, which are apparently made intentionally to correspond even across the intervening court. This cannot be said of either Mycenae or Tiryns; for though there is evidence that upper floors had been adopted in the domestic buildings, the megara still retain the fixed central hearth with the opening above, and there is no appearance of symmetry in the general ground-plan.

It cannot be doubted that the immunity from hostile attack which Crete owed to its insular position and maritime power, and the peaceful evolution of its culture, had its effect on the general form of its architecture. This is evident in the open character of some of the external doorways of the palaces, the plans of which are not traceable to any earlier type. Their distinguishing feature was the single supporting column of the architrave of which the actual form remains unknown. This typical plan is found in the south-west entrances at both Knossos and Phaestos. It also seems to have been that of a recently excavated south entrance at Knossos, with its long stepped approach up the side of the ravine, and possibly of that on the south side of the latest palace at Hagia Triada.¹

External doorways of this form were not, generally speaking, important architectural features, and may be regarded, as Noack suggests,² merely as sheltered porches protecting the entrances to corridors which led to the more important parts of the interior. It was only at the

of palace architecture, one of the ornate Mycenaean style in the palaces of Alcinoüs and Menelaüs and the other of a simpler Achaean style in that of Odysseus in Ithaca. It may be noted that there are many references to stairs and upper storeys in the *Odyssey*, implying that in any case the later Homeric palace, based probably on Ionian buildings, inclined to an eastern rather than to a northern type.

¹ *Ante*, p. III.

² "O. and P.," pp. 8, 9.

latest rebuilding of the palace at Phaestos that the idea of enlarging this form of porch into an imposing state entrance, approached by a wide flight of steps, took shape. But while the central column of the frontage was retained, the back portion was planned after the fashion of a megaron. It is obvious that the space which answered to the central hall was too shallow for domestic use, and was evidently only fitted for a ceremonial reception; but behind it, marked off by a stylobate and three columns, was a spacious light-well, which, though obviously not a constructive necessity, may, by suitable decoration, have added much to the architectural effect.

It is not only in the details of gateways and halls that there is a marked difference between Crete and the mainland. In the island palaces the amenities and luxuries of social life were highly developed. At Knossos the number of men and women engaged in domestic service or in the practice of various handicrafts, must have given it the character of a small town. The internal court was a necessary means of communication between the portions which were mainly devoted to ceremonial, religious, or official functions, and those which were assigned to domestic use and secular employments. At Phaestos and Hagia Triada communication was still further facilitated by small peristyle courts which must, no less than the open loggias or porticoes, have been peculiarly attractive features in the large palaces. But in the mainland fortresses the courtyards were to a large extent part of the defensive system, meant to assist a garrison in the protection of buildings which lay in the background. The difference has been compared to that between the quadrangle of a college and the bailey of a mediaeval castle; and there are in fact other features, such as the ramped approach, the portals like gate-houses, and the massive towers to which close parallels can be found in the feudal castles of France

and England. On the other hand, Sir Arthur Evans has remarked on the striking suggestion of an Italian renaissance palace afforded by the columned hall and staircase of the domestic quarter at Knossos. In these comparisons it is impossible to ignore the difference between the peaceful and uninterrupted development of the Minoan culture, and the changeful and sometimes turbulent conditions under which the civilization of the mainland had been evolved. It must be said that in the later palaces of both Mycenae and Tiryns an approximation to the complexity of Cretan planning may be discerned. At Mycenae the courts, if we may judge by what still remains, were not entered by fortified gates, and were bordered by habitable halls or passages of more than one storey. At Tiryns, which was more distinctly a fortress than the acropolis of a civil community, the domestic buildings are more closely connected by internal corridors and doors of communication; whilst in both the use of columns as an architectural feature is more evident than in other pre-Hellenic sites. But this is only to be expected where an identity with Cretan culture is evident in all the decorative features, and in so many works of art. Amongst these may be mentioned particularly a fresco from Tiryns showing a scene of "bull-grappling" almost reproducing a fresco from Knossos, the somewhat similar subjects on the celebrated gold cups from Vapheio, the silver ox-head with golden horns from one of the shaft-graves at Mycenae, the model of a shrine from the same grave, with doves and the familiar horns of consecration, and numerous engraved seals, showing figures and costumes completely Minoan in style.

But notwithstanding the profound effect which the culture of Crete exercised, either by immigration or commerce, on that of the mainland, the latter adhered to the end, probably for reasons dictated by social

conditions, to a traditional type of fortress-palace. Massive ramparts with fortified gateways, not unworthy to be compared with the cyclopean work of Tiryns, still appear at Goulas, perhaps the latest of these pre-Hellenic fortresses, as it was probably one of the first to fall in the irruption of the northern tribes by whom the whole Mycenaean civilization was for a time submerged. But when under new rulers with an elaborated religious ritual a new phase of civilization gradually arose amid the ruins of the old, the ancient isolated plan of the Mycenaean megaron still survived; and, combined with the external colonnade derived from the columnar architecture of Crete and Egypt, became the type upon which the perfected Hellenic temple of later days was based.¹

¹ The process is indicated in greater detail in the volume "Hellenic Architecture, its Genesis and Growth."

CHRONOLOGICAL DATA

(APPROXIMATE)

(Early, Middle, and Late Minoan are denoted by E.M., M.M., and L.M.)

B. C.		EGYPTIAN DYNASTIES
Before 3000.	Neolithic period in Crete. Deep stratum at Knossos possibly dating from 8000 B.C. Early dwellings at Miamu, Megasa, etc.	
3000.	Bronze Age begins in the Aegean.	
2800-2500.	E.M.i. Prehistoric settlements at Troy.	
2500-2300.	E.M.ii. Necropolis at Mochlos. Stone buildings at Vasiliki in Crete. Primitive communal tholoi at H. Triada etc., in Mesará. Stone-built town at Phylakopi, Melos. Second fortress at Troy (brick-built).	III-X
2300-2100.	E.M.iii. Probable early Burg on the hill at Knossos. Hypogaeum at the south end, and entrance at north end constructed.	XI
2100-1900.	M.M.i. First large palace at Knossos built, the hill being levelled at the top, and the hypogaeum filled up. The palace at Phaestos built. Troy II burnt (c. 2000).	XII
1900-1700.	M.M.ii. Extensive reconstruction of the palace at Knossos. Cutting made on the east slope. High level of civilization attained. Fine ceramic ware. Private houses shown on painted tiles.	
	Palaces at Knossos and Phaestos extensively damaged by fire.	

B. C.		EGYPTIAN DYNASTIES
1700-1600.	M.M.iii. Palace of Knossos restored. Evidence of damage by earthquake (<i>c.</i> 1600). Royal tomb at Isopata. First villa at H. Triada built. Town of Gournia developed.	XIII-XVI
1600-1500.	L.M.i. Palace at Phaestos rebuilt on new foundations. The south stepped approach and viaduct across the ravine at Knossos constructed. Little Palace and Royal Villa built. New town at Phylakopi. Increasing power of Mycenae. Shaft-graves (<i>c.</i> 1500).	XVII
1500-1400.	L.M.ii. Palace at Knossos re-modelled. Throne room constructed. Culmination of Cretan culture. Mycenae and Tiryns fortified and new palaces built, probably under rulers of Cretan race. Grave circle at Mycenae constructed, and domical tombs adopted for royal burials. Troy VI built.	XVIII
1400-1200.	L.M.iii. Crete invaded: the great palaces sacked and country towns destroyed. The palaces partially re-occupied and H. Triada rebuilt on new foundations (<i>c.</i> 1350?). Mycenae supreme in Peloponnesus. Transition to the age of Iron.	XIX
1180.	Siege and Fall of Troy.	XX
1100-1000.	Dorian invasions of Peloponnesus, and partial submergence of Mycenaean civilization.	XXI

INDEX

- Andros, I., 28 *n.*
 Arne, 197-8.
- Bastion, East, at Knossos, 77.
 Bathrooms, 74, 120, 152, 169.
 Beehive tombs, 26. *See* Tholoi.
 Brick, use of, in Troy II, 16,
 22-3; in Crete, 222.
 Bronze Age, 9.
 "Bull grappling," 81, 206.
- Ceramics as indices of date, 6,
 29, 30.
 Chalandriani in Syros, 46.
 Chamber tombs, 26-7, 38 *sq.*,
 181.
 Circular hut, 8; structures, 28 *n.*
 Column bases, 96, 124; at
 Tiryns, 154.
 Column, impression of, 85.
 Columns, 202; forms of, 85,
 125; at Troy VI, 144.
 Crete, advance of, 24.
 Crete and European civiliza-
 tion, 5.
 Culture, high level of, in Crete,
 36, 38.
 Curled leaf ornament, 129.
 Curvilinear ground plans, 24 *n.*,
 25.
- Dhimini (Thessaly), 46.
 Dimerli, Lion design at, 162.
- Disk ornament, 161-2.
 Domical tombs. *See* Tholoi.
 Dörpfeld, Dr. W., his work at
 Troy, 14-23, 133-45.
 Dromos-tombs, 39-42.
- Egypt, intercourse with Crete,
 9.
 Egyptian influences in Crete,
 45, 112, 176.
 Elliptical bases, 96.
 Evans, Sir A., his excavations
 in Crete, 2 and *passim*.
- Fortification, rare in Crete,
 38; general in other islands,
 46.
 Fortified sites in Greece, 147.
 Foundations, 121.
 Frescoes, 73.
- Gates, ground plans of, Troy II,
 18; Troy VI, 138; Tiryns,
 150, 154; Mycenae, 162;
 Goulas, 192.
 Goulas or Gla, 148, 189-98.
 Gournia, 38, 116-20.
 Graves, neolithic, 7; various
 forms of, 26, 44.
 Ground plans, curvilinear, 24,
 25.
 Guest House at Knossos, 33-5.

Hagia Triada, 49, 105-13; tholos near, 26; megaron, 106; latest structures, 110; Harvester vase, 112 *n*.

Hearths, use of, 70, 202; at Tiryns, 152; at Mycenae, 168.

Helladic periods, 163.

Herodotus on the Cretans, 2.

Hissarlik, 11, 22.

Hittite designs, 162, 176.

House fronts shown on tiles, 115.

Houses, private, 115-6; at Mycenae, 170.

Hypogaeum at Knossos, 30-2.

Insulae of early palace at Knossos, 33-4.

Isopata, royal tomb at, 39-41; tomb of the Double Axes, 42-4.

Juktas, Mount, sanctuary on, 34.

Karpathos, I., 3.

Knossos, early palace (Middle Minoan I), 30.

— excavation on east side, 34; early palace destroyed, 37.

— later palace, sketch plan of, 52; substructures on west side, 54-5; stepped entrance from the court, 55-6; south-western porch and Corridor of the Procession, 59; south propylaeum, 59-60; the eastern wing, 63; domestic quarter, 67; quadruple staircase, 62, 67, 71; Hall of the

Double Axes, 69, 123; Queen's Megaron, 72; latrines, 74, 75; theatral area, 79.

Knossos, Little Palace, 82.

— Royal Villa, 85; basilican hall, 86.

Kyanos, 129, 152.

Labrys, double axe, 48.

Labyrinth-panel, 77.

Light-wells, 70, 73, 74.

Lion Gate at Mycenae, 159.

Mallia-Vrakkas, palace at, 50 *n*.

Masonry at Troy II, 20.

Mediterranean race, the, 4.

Megaron, different forms of, 132, 154, 207; at Dhimni (primitive), 46 *n*.; Troy II, 20; Troy VI, 144; Knossos, 69, 72, 123; Phaestos, 95, 97-8; Hagia Triada, 106; Tiryns, 151-3; Mycenae, 167; Phylakopi, 133; Goules, 194, 195.

Megasa, 8.

Melos, 9, 46, 131.

Mesará, vaulted tombs of, 28.

Mesopotamia, rare use of columns in, 202.

Miamu, cave dwelling at, 7.

Minoan chronology, 6, 7.

Minos, 37.

Mochlos, I., 14.

Modillion-like ornament, 129.

Mycenae, palace, 163-70; shaft graves, 172-80; recent excavations at, 157, 163; Lion gate, 158-62.

- Obsidian, 9.
 Offsets in walls at Troy, 136, 141-2; Tiryns, 153; Goulas, 191.
 Orchomenos, tholos at, 186.
 Oval house at Chamaizi, 25.
 Palaikastro, 116.
 Pausanias cited, 148, 180, 186.
 Pavements, at Knossos, 123.
 Peristyle courts, 102, 106, 205.
 Phaestos, early palace, 36; destruction of, 37.
 ——— palace, ground plan, 90; theatral area, 94; sanctuaries, 48, 95; state entrance, 99; peristyle court, 101-2; early south porch, 96.
 Phylakopi (Melos), 9, 46; walls of, 132.
 Pillars, sacred, 48, 55, 87.
 Porches, Cretan type, 204.
 Pottery, 6, 29.
 Priam, Treasure of (so-called), 14, 18.
 Private houses, 115-6, 170.
 Processions depicted, 80, 112.
 Ramp at Troy II, 19; at Tiryns, 150; at Mycenae, 172, 173.
 Religion in the Aegean, 47.
 Roofs, 128.
 Rosette ornament, 21, 128.
 Sanctuaries, hypaethral, 34, 47, 118; domestic, 48.
 Sanitation at Knossos, 36.
 Schliemann, his excavations, 1, 2, 172 *sq.*
 Spiral decoration, 10.
 Stairs at Tiryns, 153.
 Stone Age, 7.
 Stucco, use of, 121 *n.*
 Symbols, religious, 48.
 Theatral area, Knossos, 79; Phaestos, 94.
 Tholoi, 182-8; in Crete, 26-8.
 Throne room, at Knossos, 49, 56; at Mycenae, 167.
 Timber in walls, in Troy II, 16, 20; at Knossos, 123; in floors, 124.
 Tiryns, 148-55.
 Tombs, 39; at Isopata, Royal, 39, and of Double Axes, 42.
 Towns, Cretan, 114-20.
 Treasury of Atreus, 183; of Minyas, 186.
 Triglyphs (so-called), 96, 129.
 Troy, Prehistoric, 13.
 Troy II, 14-23; III-V, 133-4; VI, 135-45.
 Tyliссos, 120.
 Vapheio, domical tomb at, 187.
 Vasiliki, 120.
 Viaduct at Knossos, 33, 35.
 Zafer Papoura, cemetery, 44.



LONDON : CHARLES WHITTINGHAM AND GRIGGS (PRINTERS), LTD.
CHISWICK PRESS, TOOKS COURT, CHANCERY LANE.



GEORGE PHILIP & SON, LTD.

THE LONDON GEOGRAPHICAL INSTITUTE

G. Bell & Sons, Limited

The Origins of Architecture

By EDWARD BELL, M.A., F.S.A.

Post 8vo, with numerous Illustrations, Maps, and Plans.

I. THE ARCHITECTURE OF ANCIENT EGYPT. A Historical Outline. 7s. 6d. net.

"A good introduction to Egyptian architecture. . . . The descriptions are always clear, the plans legible, and the illustrations numerous and well selected."—*Times*.

II. PREHELLENIC ARCHITECTURE IN THE AEGEAN.

Dealing chiefly with Trojan, Cretan, and Mycenaean architecture.

III. HELLENIC ARCHITECTURE: Its Genesis and Growth. 7s. 6d. net.

"A useful summary of the subject, as developed by recent archaeological research, very fully illustrated by small photographs, drawings, and plans."—*Times*.

"An excellent introduction to this large subject."—*The Builder*.

"Contains some really constructive work."—*J.R.I.B.A.*

IV. THE EARLY ARCHITECTURE OF WESTERN ASIA, CHALDAEAN, HITTITE, ASSYRIAN, PERSIAN. A Historical Outline. 10s. net.

"Mr. Bell must be congratulated on having produced so very handy a study of a most interesting and important subject. . . . The book is cordially to be recommended as a useful and capable discussion of the subject."

Journal of the Central Asian Society (DR. H. R. HALL).

"The book is admirably written and will adequately serve its purpose."—*Journal of Hellenic Studies*.

LONDON: G. BELL AND SONS, LTD.

OCT 28 '63

OCT 22 '64

NOV 7 '68

NOV 25 '70

MAY 14 '71

MAY 29 '71

NOV 16 '71

NOV 29 '71

MAY 30 '72

OCT 12 '72

OCT 26 '72

MAY 31 '73

APR 23 '75

~~NOV 26 '75~~~~MAR 10 '77~~~~OCT 27 2007~~

PELLETIER LIBRARY, ALLEGHENY COLLEGE



3 3768 00571 9607

89940

722.8

B413p

